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Number Twenty-two 🔷 Summer 1952







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American Fabrics

that the American textile industry casts a major influence on the economic and social aspects of the world in which we live and that it has deservedly attained the world's pinnacle from which it can never be dislodged. This volume number twenty-two of American Fabrics, focussing its editorial spotlight on Wool, on the latest Blend and Fiber Developments, and on the Story of Worth Street, a Great Textile Tradition . . . is offered as a measure of help, of service . . . and, we hope, of inspiration.

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Number 22



Summer 1952

American Fabrics

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Hat by Mr. John

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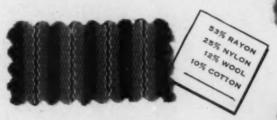
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what is a Chatham Fabric made of?



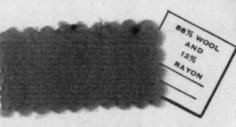
Chatham Blankets

Chatham Automotive Upholstery



Chatham Ladies' Coatings

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BCAVULLO



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This is the second in a series of pages published by Ciba to acquaint industry and the public at large with its expanding facilities for production and service.

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51 Madison Avenue, New York 10 . Mills at North Adams, Massachusetts







scheme for exterior decoration... new textures and colors for Fall

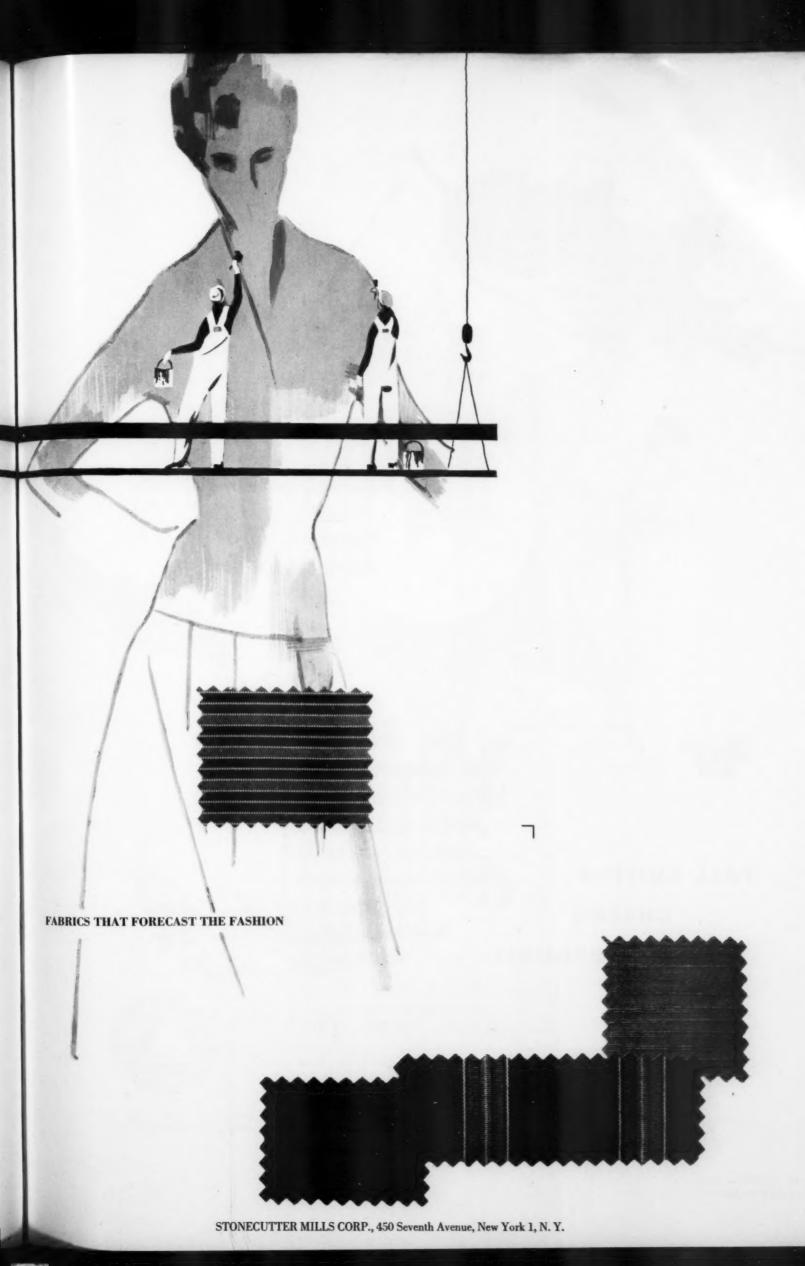
Stonecutter shows its "hand" in what will be your staple as well as your novelty fabrics for Fall. There are the crisp, demi-crisp and supple hands...there are the tie-silk, the rustic, the fluid drape...there are the grainy, the tweedy and the ribbed textures...

Stonecutter shows its "colors" in what will be your most saleable shades and combinations for Fall. There are exciting and complete color ranges for daily selling and for special promotions...there are the new yarn-dyed groups in single and multi-colored novelties as well as the whole gamut of piece-dyes...there are fabrics accented with Lurex...there are gay ribbon color effects...there are appealing new stripes and checks... there is everything important in solids, iridescents and vari-colored combinations.

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in this issue...

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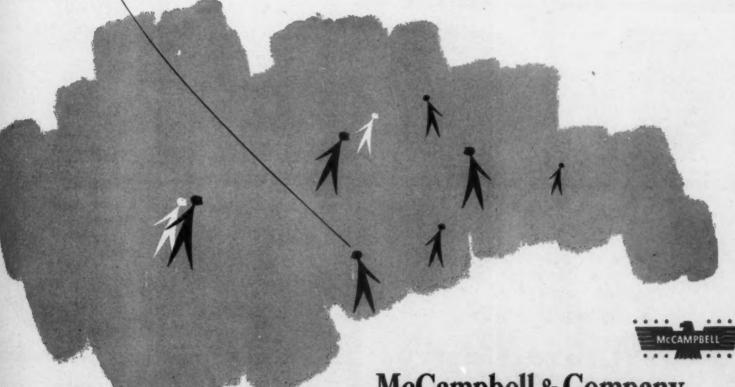
In these trying days, it isn't easy to pick the right road ahead in the textile business.

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Spun-dyed 'Fibro' is a color range staple produced by incorporating the coloring matter into the viscose solution before spinning, so producing high light and washing fastness.

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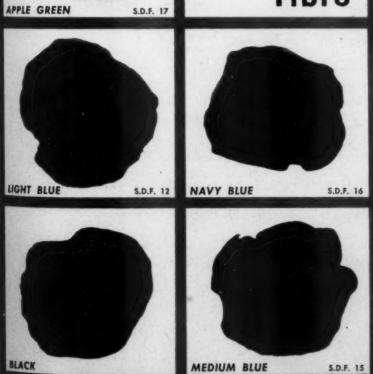
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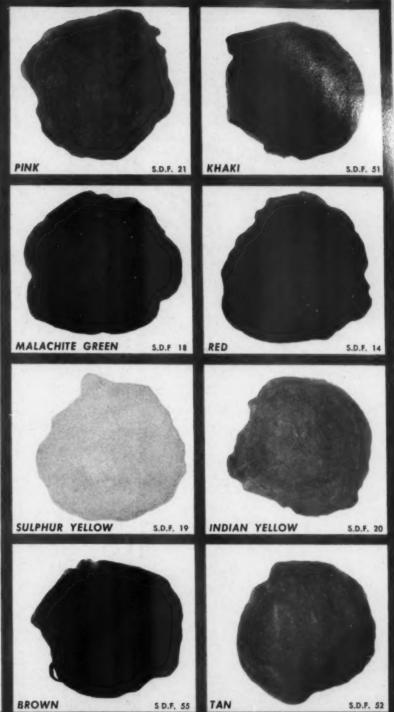


'Fibro' is the registered trademark for Courtaulds' viscose rayon staple

SPUN-DYED

'Fibro'





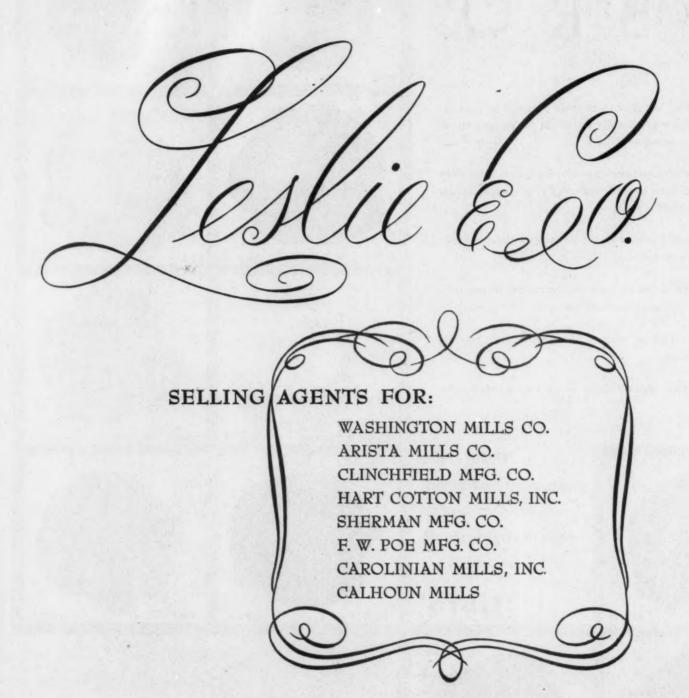
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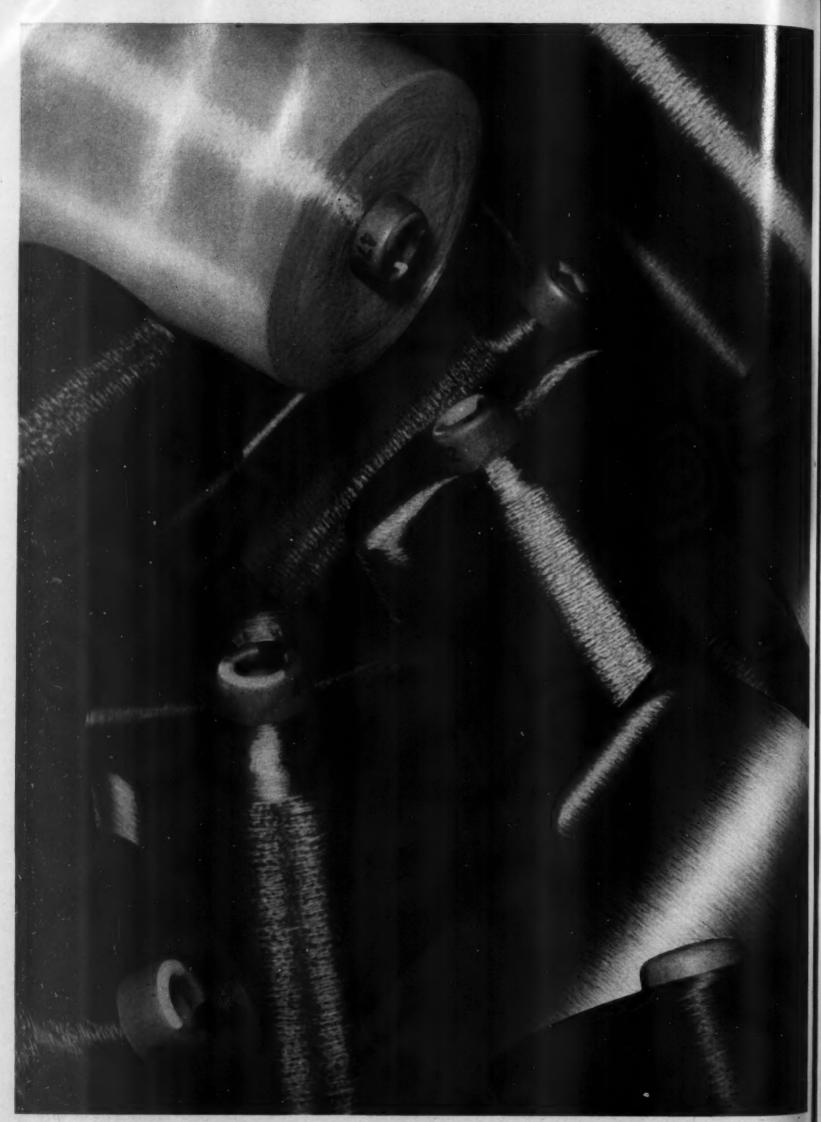
luxury at low cost • washable or dry cleanable • greatly resist wrinkling • dry quickly—iron easily • resist shrinking and stretching • maximum wear with minimum care



*A trade-mark signifying fabric finished and tested according to processes and standards controlled and prescribed by Joseph Burggat & Sons Co.

Four dresses, above and right, by Anastasia and Vera of Bogoto. Dress, bottom right, by Filomena Amadoz of Medellin.





Fron

From a black Navy neckerchief, a rainbow ...

Chromspun



The page opposite gives you a glimpse of a new fiber that is to play a colorful part in your future, in both apparel and home furnishings. It is Chromspun, Eastman's color-locked Estron acetate fiber.

Actually, Chromspun did not arrive all at once in the textile world in a burst of rainbow colors. It began simply as a black fiber . . . a fiber of such pure black, of such extraordinary color fastness, that the Navy adopted it for sailors' neckerchiefs. Chromspun neckerchiefs, the sailors found, would not crock off on white blouses in any kind of weather, nor bleed color when washed.

When the fashion world discovered black Chromspun, it envisioned an end to fading problems if only the fiber could be produced in a range of colors. Eastman chemists have worked for years to make this vision a reality. They tested thousands of dyes and pigments in a search for coloring agents as fast as Chromspun black.

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Chromspun provides life-of-the-fabric color fastness to light, atmospheric fumes, perspiration, crocking, washing, and dry cleaning fluids.

Chromspun, moreover, makes possible a range of color effects in fabrics never before brought within the reach of so many consumers.

And because Chromspun is an Estron acetate fiber, it offers you not only lasting color freshness but also high resistance to shrinkage and wrinkling, unexcelled draping qualities, easy cleaning, quick drying, and immunity to moths and mildew.

Many beautiful fabrics for Fall have already been woven of Chromspun... satins, taffetas, twills, baratheas, failles, repps, ottomans, stripes, jacquards, and plaids...all in entrancing color effects.

You'll find Chromspun this Fall in dresses, suits, blouses, separates, sportswear, rainwear, neckties, and accessories. And before long, you will also be able to buy Chromspun for your home in curtains, draperies, bedspreads, and other home furnishings.

The new word to remember is Chromspun. It means life-of-the-fabric color freshness. Look for Chromspun this Fall in the finest stores.

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Two Unique Christmas Gifts

for the man or woman who has everything.

* * *

It is not too early to think of your Christmas gift problems. A gift subscription to **Gentry** or **American Fabrics**... America's most beautiful magazines... will bring a year's pleasure and delight to someone who is near and dear to you.



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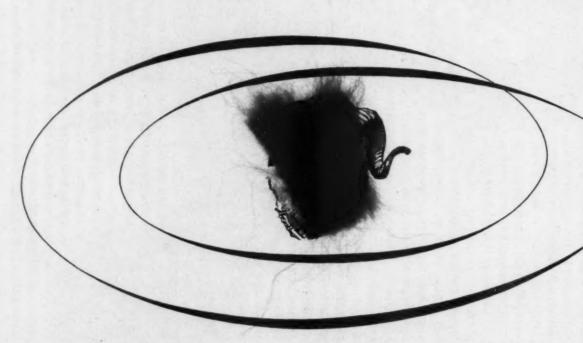
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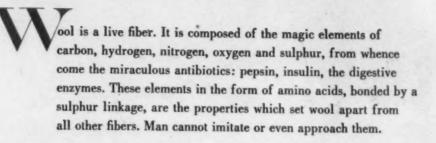
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THE SEVEN WONDERS OF WOOL



A Miracle of Nature—
Perfected by Man
in the Laboratory of Time





1. WOOL IS AN INSULATOR: It recovers from compression beyond all other fibers. Wool entraps a wall of air between the body and the outer air, maintaining body heat at an even temperature, warding off chill and heat prostration alike.



2. WOOL IS ABSORBENT: It absorbs up to 30 per cent of its weight without becoming appreciably damp. Wool's absorbency makes it an unequalled, protective insulator by preventing clothes from clinging to the skin and robbing the body of its heat.



3. WOOL IS DURABLE: Wool's protein substances are arranged in an amazingly complex structure which resists breakage to an astonishing degree. Wool can be twisted, turned and stretched. It always returns to its original shape without being deformed.



4. WOOL IS RESILIENT: Wool's complex inner structure is surrounded by a scale-like covering which quickly recovers from distortion when the fiber is stretched, thus preventing stretching and sagging of the fabric and of garments. That is why wool garments always keep their shape and retain their warmth.



5. WOOL IS WONDERFUL TO TAILOR: No other fiber can be woven into such an infinite variety of fabrics in different weights, textures and effects. No fabric tailors like a wool fabric. Its live, flexible character enables the tailor to shape it under the iron and through steaming. That is why wool garments can be altered so beautifully and successfully.

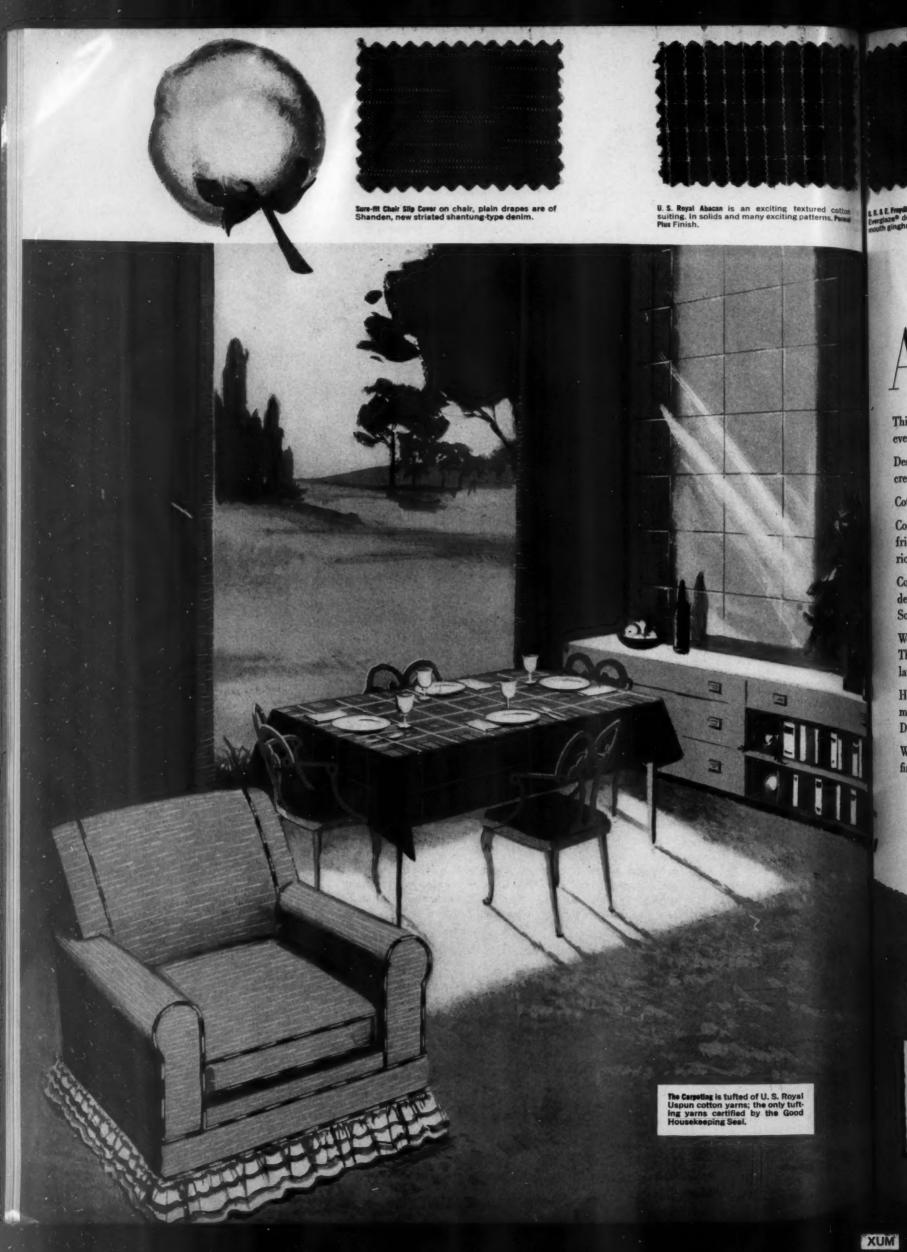


6. WOOL DYES MAGNIFICENTLY: It is dyed in the fleece, in the yarn, in the top, and in the piece. Wool has more chemical groups anxious to blend with dyes than any other fiber. It resists acids, soils, and perspiration to a greater degree than any other fiber.



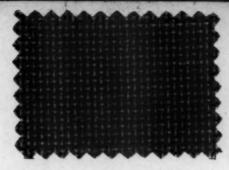
7. WOOL IS FLAME RESISTANT: In intense heat, wool will char but will not support flame. That is an increasingly necessary insurance against the growing dangers of flammable fabrics, especially in children's apparel and blankets.

THE WOOL BUREAU INC. 16 West 46th Street, New York 36, N. Y.





ELEE Freymers's Child's Bress is of Cool Glaze, New Everglaze's denim, with sparkling accents of Yarmeth gingham.



Jonathan Legan Dress is of U.S. Gordon Cotton Suiting of cotton sparked with rayon. Wrinkle and spot resistant, washable, Sanforized. Permel Plus Finish.



Brentweed Hebby Jeans are of U. S. Royal Tweeden, a new tweed texture denim.

America Lives in Cotton

This is the year of the great Revival of Cotton. It is a peak fashion in nearly everything to wear, and for the home.

Designers are finding the special and intrinsic virtues of cotton ideal for creating new, beautiful things that add ease and charm to casual living.

Cotton is such a friendly fiber. It is comfortable to wear, and long-wearing.

Cotton is versatile. It can be spun, woven and finished to be a hardy friend, or a fairy beauty. Its pure white fibers can be dyed to the richest colors, the exhilarating high shades, the pleasing pastels.

Cotton is practical. It can be washed without shrinking. Insect destroyers of other fibers leave cotton alone. Cotton is economical. So, more people can enjoy more luxury in their lives thanks to cotton.

We are proud to salute the bright new future of this fiber. Though cotton is nearly as old as time, it is today's latest news in textiles.

Here cotton is shown in a few of its exciting, modern phases, in products made by the Textile Division of United States Rubber Company.

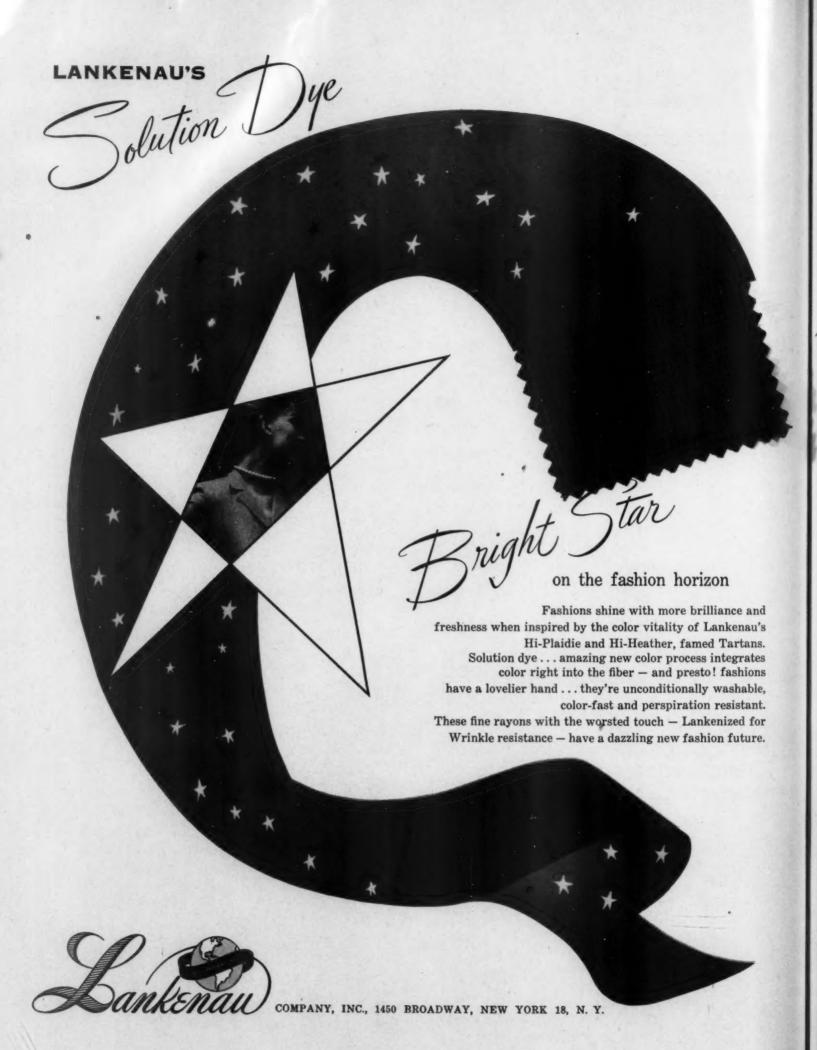
We are one of the world's largest manufacturers of fine cotton products.

Textile Division

UNITED STATES RUBBER COMPANY

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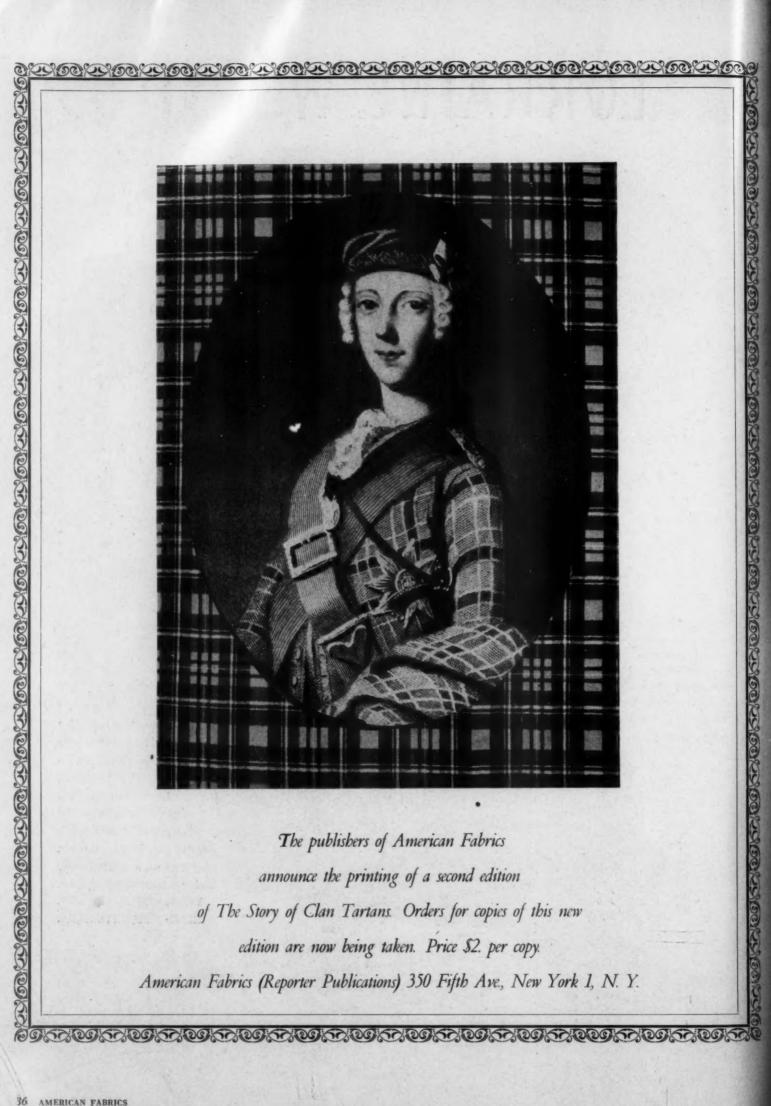
U.S.ROYAL
Fabrics



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As appearing in September GLAMOUR, October SEVENTEEN





Bart Schwartz Corp., 1407 Bucay, N. Y. C. 18

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Quality Controlled Fabrics

Fashion comes of age with Glen Raven's expert handling of Solution Dye — brilliant color process for lovelier and more durable fabrics.

Experience and a mill with a tradition of fine craftsmanship back this modern miracle which "builds" color right into the fiber, giving fabrics glowing textures... making them unconditionally washable and colorfast.

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Glen Raven



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STEVENS FOR ALL

TEXTILES SINCE 1813

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ARE NOW LOCATED IN THE NEW AIR-CONDITIONED

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BROADWAY AT 41ST STREET, NEW YORK 36, N. Y.

This move brings under one roof the New York sales and administrative offices of the Woolen and Worsted Goods Division, formerly located in the Empire State Building, the Cotton Goods Division, formerly at 44 Leonard Street, the Rayon Goods Division, formerly at 1410 Boadway, and the Utica Mohawk Division, formerly at 55 Worth Street.

We believe that through this move our customers will be better served at greater convenience to themselves.

We look forward to welcoming them and all friends of the Company in our new quarters.

Regional sales offices will continue to be maintained in:

ATLANTA . BOSTON . CHICAGO . CLEVELAND DALLAS . LOS ANGELES

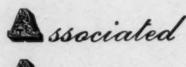
ST. LOUIS PHILADELPHIA · SAN FRANCISCO

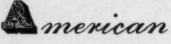
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Fine Arts Textile Designs

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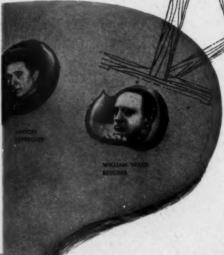
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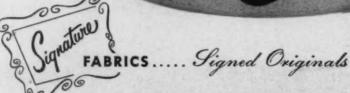


To the world of fashion, Signature Fabrics brings "signed" originals... fine art by the yard to give inspiration and new scope to America's designers of better fashions.

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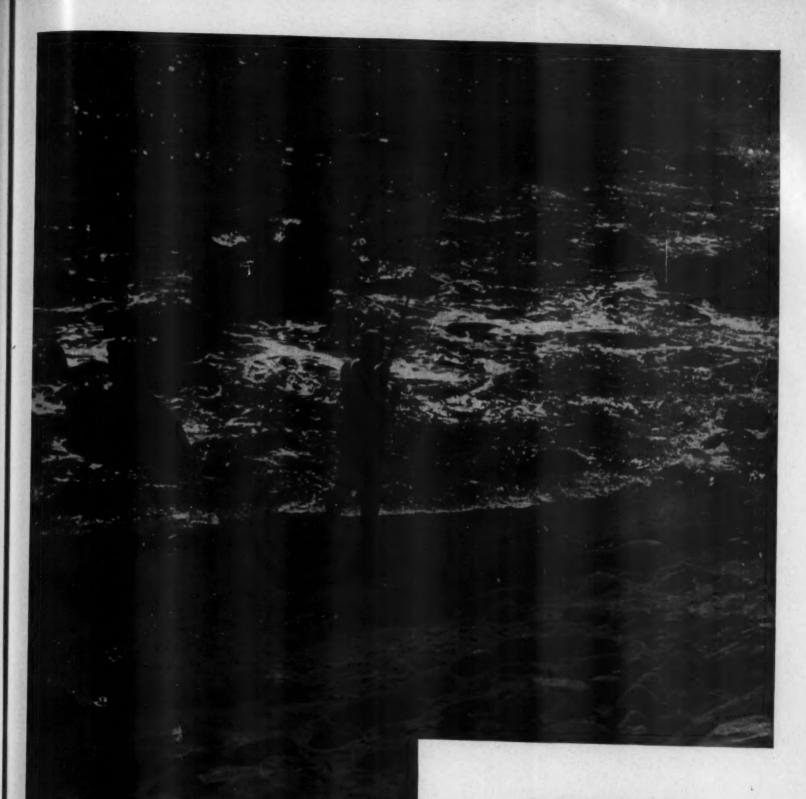


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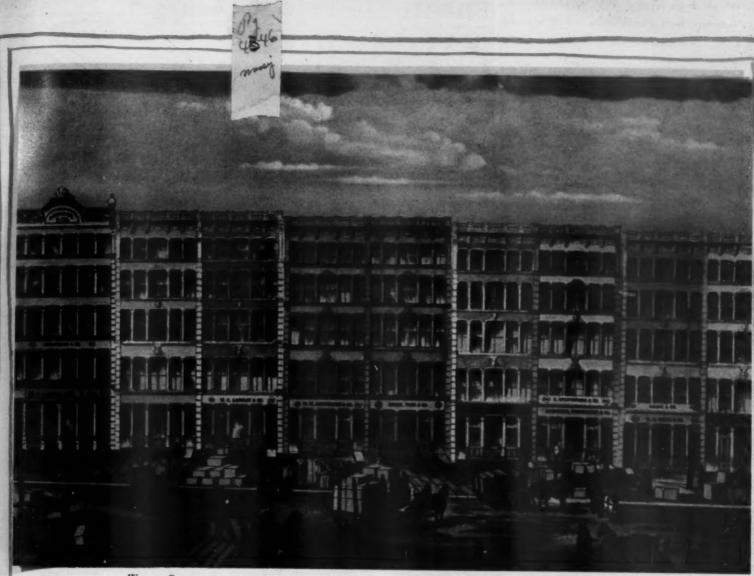
Fabulous new fabric created
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figure-glorifying late-day dress with
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WORTH STREET, SOUTH SIDE, SHOWING SOME HOUSES STILL IN EXISTENCE TODAY. FROM AN OLD PRINT.

Courtesy The Merchants Club

AMERICAN FABRICS PRESENTS THE

Worth Street
Story

They really should have called it Textile Street instead of naming it after William Jenkins Worth, the Mexican War General. For it is as much the street of cotton textiles as Wall Street is the thoroughfare of finance. Within an area of six blocks from the corner of Worth and Church Streets, approximately 80 per cent of America's woven cotton fabrics are sold. Call it a five-billion-dollar business at today's prices, and that won't be far wrong. Yet the area required for this huge operation is so highly concentrated that if a baseball were pitched to Ted Williams or Ralph Kiner at Worth and Church they could knock it out of textile bounds in any direction.

the Worth Street Story

The story of Worth Street, of the men who made it, of its great enterprises and its philosophy, is an epic of integrity, shrewdness and rugged individualism unsurpassed upon the American scene.

IT ALL STARTED less than one hundred years ago with the removal of the New York Hospital in 1869 from a large plot of ground between Duane and Worth Streets. The famous wholesale dry goods firm of H. B. Claffin had already led the way in 1861 when it moved to Church Street between Worth and Thomas. If you have ever been in that neighborhood even once you will know instantly that this is now the Church Street entrance of 40 Worth; and you will know that the number 40 has the same significance for Worth Street and textiles as the number 10 for Downing Street and diplomacy.

Thirty nationally known jobbers followed the Claffin move as soon as the hospital lots became available, so that the tone of the district was set by the wholesale trade. In fact, it was probably the concentration of so many of their biggest customers practically within shouting distance that lured the textile merchants from Pearl Street, Liberty and other downtown locations.

The Early Merchants

These merchants can be traced back to widely varying antecedents. Many were importers and initially took on the sales representation of American mills as a side line. This is not surprising when one stops to think that a hundred years ago the importations of dry goods through New York City alone reached a total of \$60,000,000. This was only one million dollars less than the entire production of cotton goods in the United States for the year 1850.

Many of the merchant princes who founded Worth Street

were New Englanders. Some had started in business to service the famous clipper ships of the first half of the Nineteenth Century. As ship chandlers, they handled chains and anchors as well as sails and rope. The sailing ship continues to be a favorite textile trademark today.

Others dated back to the days when textile auctioneering was an important method of getting goods distributed. Whatever their origin, the first Worth Streeters were incureably addicted to the stovepipe hat and frock coat, which continued to be the symbol of their calling, and virtually their uniform, until the presidency of the first Roosevelt.

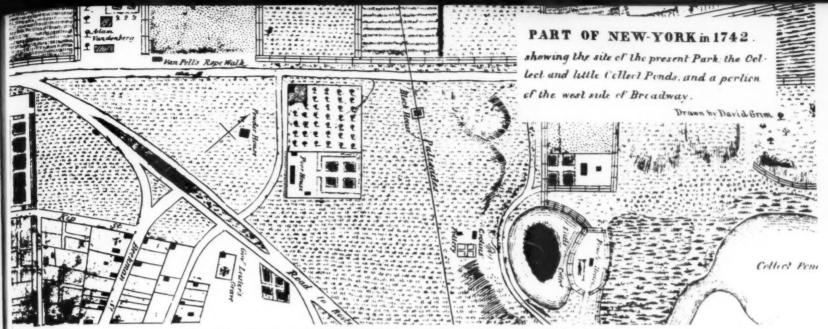
Inside the Commission Houses

Impressively ensconced in enclosed offices, these dignitaries smoked their cigars and looked out at their clerks on high stools hunched over long desks. Here smoking was forbidden. Unless you were one of the firm, you literally checked your cigars in little boxes like postoffice boxes provided for that purpose.

The desks of the salesmen in the larger concerns were arranged in rows, separated by aisles, as in a schoolroom. Department heads worked in raised enclosures along the walls that gave a decidedly cage-like impression. The set-up in the jobbing houses was similar, with department heads sitting on a platform from which they could watch all activity in their division. Textile salesmen had to climb up on the platform to talk business. No papers were passed. The salesman kept his record and the department head kept his. Every year millions



Lispenard's Meadows, from the present site of Broadway near Worth Street, drawn by A. Anderson, 1735.



Part of New York in 1742. In the center is the Poor House with its grounds, afterwards the site of Duane and Worth Streets. From an old map in the possession of the Merchants Club.

of dollars worth of goods were sold without a paper that could be taken to court in case of a dispute. This unique and really wonderful method of handling even the largest transactions still represents the philosophy behind the Worth Street way of doing business.

First Faltering Steps

It must be remembered that back in the 'sixties the sale of cottons made by our own mills was still a new and young undertaking. Many of the founders of Worth Street must have had vivid memories of the first faltering steps in the distribution of American textiles. A mere seventy years had elapsed from the time the domestic textile industry got its start, when Slater's Mill went into production at the end of 1790 in Providence. By 1815 the number of mills had increased to 169 in and around Rhode Island's capital, which was then the textile center. At first merchandising and marketing lagged behind production. In that same year of 1815 it was reported that the Boston Mfg. Co. was unable to dispose of its output through any of the local importing houses. The story is that in all of Boston, which then far outranked New York as a business center, there was only one place in which domestic goods were sold. This was a shop run by Mrs. Isaac Bowers.

Though only a single loom was running at the plant, such was the prejudice against domestic goods that she found it impossible to dispose of this token production.

Less than fifty years later Worth Street was well on its way, and the gentlemen with the long cigars and tall hats were making textile history. What was the nature of the dynamic forces that sparked the industry? What were the special circumstances that encouraged this fabulous growth?

Basically of course it was part of the Industrial Revolution; or, more accurately, you might describe it as the Marketing Revolution which came hard on the heels of the production phase of the American Industrial Revolution.

Beginning of a New Distribution Pattern

A pattern of development could soon be discerned. It is described by W. Ray Bell, President of the Association of Cotton Textile Merchants of New York, as follows:

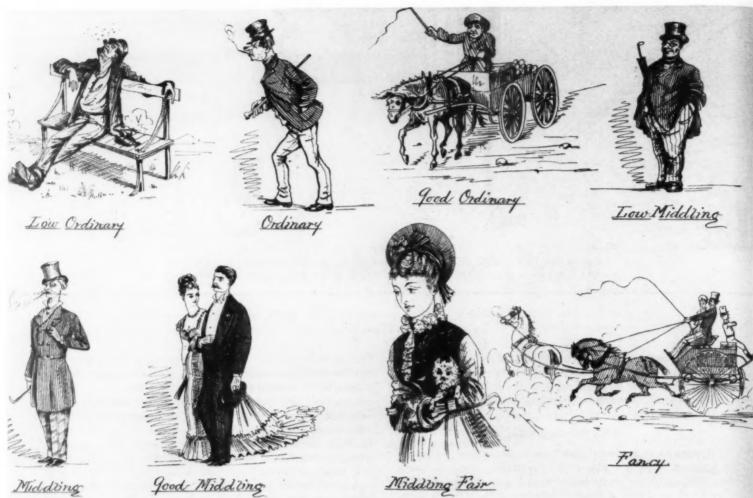
From the earliest times, the cotton textile industry has reflected a notable tendency; first, on the part of its manufacturing elements to become widely dispersed over great distances; and second, of its selling functions to converge toward central markets. Early manufacturing sought water power sites and reared its plants in the wilderness, building its cities and its mill towns and its communities about them.



The rains of Exchange Place after the Great Fire of December 16, 1835. Courtesy Galey and Lord



The Five Points in 1859 . . . the crossing of Baxter Park and Worth Courtesy Durand Taylor



THE HUMAN CLASSIFICATION . . . FROM AN OLD CARTOON.

Courtesy Greenwood Mills Inc.

Worth Street Story . . . continued

Spreading first in the Northeast, it likewise had its beginnings in early times through other States, and in the vast migration of the industry southward in later years a like pattern has been followed.*

There are obvious reasons why the City of New York became the focal point of distribution for these widely dispersed mills. To start with, it had a strategic location and famous transportation facilities by ship or rail. Then, it must not be forgotten that New York was rapidly becoming the financial capital of the country, a factor of great importance in view of the extensive and complicated financial services the selling agencies began to render to their mills.

Something else, too, was happening in New York. On the water front ready-made clothing began to be sold. This practice owes its origin to the merchant seamen and plantation owners who had to find some kind of garments for the slaves they were importing into the country. From this operation it was a natural step to offer ready-made apparel for seafaring men. Suits designed to catch the eyes of the customer were hung outside the store fronts. To discourage pilfering, they were suspended from the second story level and had to be handed down on long poles to prospective purchasers. And so the hand-me-down was born.

Tail Wags Dog

From the point of view of the textile trades, it was more grist to the Worth Street mercantile mill. The heat was on, as current slang would have it; and the day was not far distant when proud Boston commission houses with branch offices in New York were to discover that the tail was wagging the dog and that the time had come to make the branch office *Cotton Trade Journal, May 1947.

the main office. The shift of textile emphasis from north to south hastened the process.

Today Worth Street sells a production of woven cotton cloth that runs around 9,000,000,000 square yards a year. The snap brim felt has replaced the silk hat, but much of the historic flavor of the cotton textile industry's historic street may still be savored. There are still long, narrow stores in the district. In spite of the new buildings and modernized fronts, much of the original architectural design with windows framed by neo-classic columns has been retained. There's less of the mad rush that is invariably associated with Gotham.

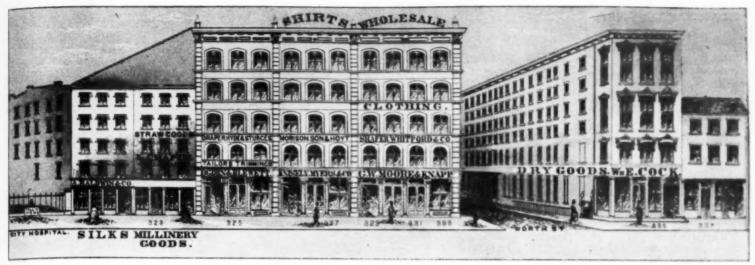
Above all, there is the continuance of the old tradition and philosophy of selling. The same kind of people still work on Worth Street, and you feel it right away.

THE MEN WHO MADE WORTH STREET

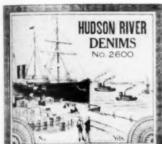
What kind of men are these who have master-minded the extraordinary marketing mechanism known as Worth Street? What sort of merchants steered the industry through the incredible difficulties of two world wars, not to mention a depression that hit the hard rock bottom of nickel cotton?

Did they sell and repent right along? Most assuredly they did, for in no other way could they have kept the show on the road. The textile business is no place for anyone who wants to sit on the lid.

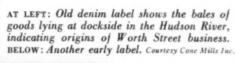
Dipping into the past, let's take a handful of the great personalities of the district at random to see what we find. You do not have to search very far before you realize that you are dealing with all kinds and conditions of men. They came to Worth Street from the North and from the South and from (please turn to next page following)



Broadway at Worth Street, about 1860.





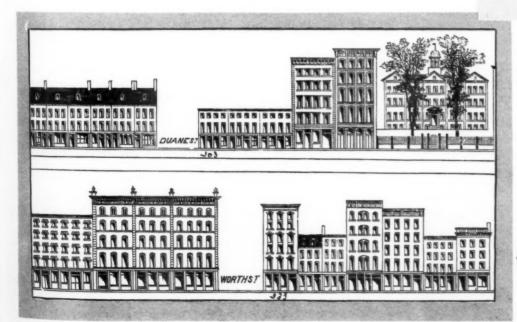




SELL AND REPENT

The old time wool stapler attired in knee breeches, thick frieze coat reaching to his heels, with his hands deeply thrust into his pockets, forms a symbol of the Worth Street philosophy.

Courtesy Wm. H. Pinnell



THE WEST SIDE OF BROADWAY IN 1865



Worth Street Story . . . continued

within the city limits of New York itself. They came from famous houses and from immigrant families; from ivy league colleges and from P.S. 422. They included among their members writers, soldiers, financiers, philanthropists, politicians, sporting men, gourmets and connoisseurs of the arts. Name the kind of man you are interested in, and the chances are you can find his counterpart written on the Worth Street record.

There was Cornelius N. Bliss, one of the founders of Bliss, Fabyan & Co., who served as Secretary of Interior under McKinley. He missed becoming President of the United States when McKinley was assassinated because he had turned down the nomination for the Vice-Presidency. He was also four-time Treasurer of the Republican National Committee, where his work was regarded with awe as a marvel of financial management and efficiency.

There was Frederick C. Dumaine who headed the famous Amoskeag Manufacturing Company of Manchester, New Hampshire, for many years the largest manufacturers of ginghams in the world. After the dissolution of his great textile empire, he continued to be a dominating figure in the



Couriesy Durand Taylo



An Election scene outside 40 Worth Street in the days when the Derby hat was universally worn. Pictures in background show that the contestants were Taft and Sherman.



business world. When he died a few years ago he controlled the New York, New Haven and Hartford Railroad. The founder of A. D. Juilliard & Company left an indelible imprint not only on the textile business but also on the world of music. This American citizen of French descent devoted

millions which he had made on Worth Street to establish the Juilliard Foundation of Music.

As long as there is a Worth Street it is not likely that the name of Leavelle McCampbell will be forgotten. He was the man who had the most to do with formulating the famous Worth Street rules. Together with Harold Vanderbilt, he wrote the international rules for the game of Bridge, and in fact they were largely written in his office. Furthermore, McCampbell's Rising Tide of Jute is as true today as the day he

Campbell's Rising Tide of Jute is as true today as the day he wrote it. He was a man of many skills and talents and an incredible perfectionist. The Merchants Club Building, which he master-minded, is a memento of his colorful personality.

Origins of Some Great Enterprises

The grocery business was indirectly responsible for bringing Moses and Caesar Cone to Worth Street. As salesmen for their father's wholesale grocery business, they had learned about cotton plaids, which jobbers of food products handled in those days. They were thus merchants before they were manufacturers. Their first mill was not started until five years after their selling agency was formed. Such was the origin of America's largest operation in denims and cotton flannels, which also holds an important position in many other cotton



textile products. Another country business was the store in Maine where the Millikens sold, among other things, the products of the local woolen mills. From there Gerrish Milliken came to Worth Street, founding with William Deering the firm that exists today and becoming one of the street's indubitably historic figures.

Another Southern enterprise builder in textiles was Leroy Springs, who pioneered a little cotton mill which grew into the largest in the world, the Lancaster Plant of the Springs Cotton Mills, where his remains are interred in the clock tower of the plant.

Floyd W. Jefferson, senior partner of Iselin-Jefferson Company, and himself one of the outstanding personalities of the cotton goods market, has contributed delightful reminiscences of the men who made Worth Street. These are contained in an address by Mr. Jefferson delivered to the Newcomen Society and recorded in a booklet under the title There Were Giants in the Earth in Those Days. In it he tells of James W. Cannon of North Carolina, who established his great towel business and his own selling house on Worth Street; of H. B. Claffin, Elisha O. Cronkhite, William Iselin, J. P. Stevens, W. E. Baldwin, Seth M. Milliken, William Deering, M.C.D. Borden and others. Some of his little vignettes of Worth Street characters are inimitable and they will be handed down wherever Worth Street memories are rekindled:

One of the best known merchants of the district at the turn of the century was punctual in all things. He hung up his hat in his office on the stroke of nine and thereafter every hour on the hour he stood at the bar at the corner of Worth Street and West Broadway. He was a man of few words. He did not indulge in conversation with his bartender or with

As he stepped to the rail the bartender, with a nod but without salutation, poured three fingers of Bourbon into a small glass and put beside it a chaser of plain water. Elija P. Smith took his medicine, walked a half block to his desk at Woodward Baldwin & Co., and reappeared for further refreshment when the clock struck the next hour. Our hero lived to a ripe old age in the love and respect of his fellow men.

Worth Street is full of strange stories that sound like tall tales but frequently turn out to be true. Floyd Jefferson tells one about Fuller E. Callaway, the founder of the business that bears his name, another of whose interests was the Lagrange

(please turn to next page following)





Cotton goods labels bearing a horse motif.







Worth Street Story . . . continued

National Bank. At that time U.S. Treasury notes were issued in sheets of four bills, which became legal currency when signed by the president and cashier of a national bank. The ten-dollar note bore a picture of William McKinley, whose resemblance to Fuller E. Callaway was marked. On his European trips, when Mr. Callaway signed United States ten-dollar bills in front of merchants to pay for his purchases, they got the idea that here was the man who had the franchise for making United States money.

Long Service in Worth Street

Some of the Worth Street careers go back to the days when Worth Street was still called Anthony Street, after Anthony Lispenard. For example; the records of the firm of Taylor, Pinkham & Co. contained the name of William E. Sawin, who was continuously employed from the day he started to work in 1837 until his death in 1907. This establishes a record of seventy years, although it must be admitted that the last few years were on a pension basis. When Sawin first went to work, one of the partners was the celebrated merchant, Preserved Fish, whose portrait now hangs in the Chamber of Commerce in the State of New York. Preserved was not an uncommon baptismal name in the Eighteenth Century and it carried over to the early part of the Nineteenth Century. It was probably the son of Preserved Fish who was mentioned in the New York Herald of October 3rd, 1840 as follows:

Married in New York August 24th, Preserved Fish to Miss Mary Shepard. Folks wonder now why men do change Each one to suit his wish But here a lovely Shepherd lass Has been transformed to Fish. Although 'twas strange, yet every one Declared the lass deserved Not only to be changed to Fish But also be Preserved. And for their future happiness They have our kindest wishes With hopes that they may have their share Of loaves and little Fishes.

No account of Worth Street personalities, however desultory and fragmentary, could possibly fail to mention the numerous sons and grandsons who are carrying on the traditions of the men who made Worth Street. It is an impressive list: there are the Millikens, Roger and Gerrish, Jr.; the Bordens, Arthur and Jack; Oswald and William Lord, the Stevens family; Herman, Ben and Caesar Cone; the Cannons and Reeves; and other familiar names representing families in the business such as Iselin, Jefferson, Bonsal, Dent, Callaway, Leslie, McCampbell, Hughes, Wright, Fullerton, Taylor, Pohlers, Comer, Watts, Montgomery.

Time alone will tell whether the first hundred years of Worth Street were the hardest. If the industry continues to find the same caliber and character of men to guide its destinies, the next hundred years can be faced with equanimity.

HOW WORTH STREET WORKS

There is a great gulf between the Worth Street way and the selling system of other industries. In fact, the more you compare cotton textiles with other products, the more you realize you are dealing with two entirely different mercantile worlds. In addition to the merchandising and marketing responsibilities, the Worth Street selling agency renders many managerial and technical services. These often include such diverse functions as product development, production schedules, credit, traffic management, financial counsel and other commercial operations which are generally divorced from sales.

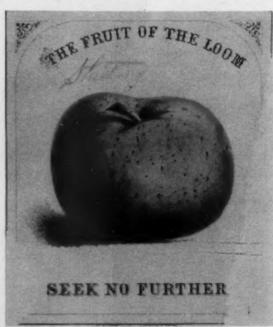
Even the basic business of selling soft goods is far more intricate and complicated than selling hard goods, food stuffs and most other lines. That is because of the variety of products sold on Worth Street as well as on account of the corresponding variation among the uses and users. There are many different kinds of cotton textiles, ranging from ingredient products that must be processed or fabricated before they are ready for the consumer, to finished goods.

To start there is the greige or grey goods just as they come off the looms, unbleached, undyed and otherwise unprocessed. In this classification you find cheese cloth and tobacco cloths for covering that important crop on the fields. Then there is a long list of indispensable industrial fabrics in the grey . . . cloths for filtering, insulating, buffing and polishing. Next come the grey goods that are combined with other materials to make oil cloth, abrasive fabrics, balloon fabrics, footwear, bookbindings. That means Worth Street must provide experts who are well posted in many different industries, to the point of guiding their mills in constantly developing new constructions for new industrial uses.

The Converters

Grey goods are also sold to converters, who purchase the large part of the yardage that is especially earmarked for apparel. This is then converted into finished materials by bleaching, dyeing, printing and finishing in a great variety of operations to impart desirable properties of hand, luster, wrinkle-resistance, etc. It would be an impossible task to list the infinite variety of constantly changing fabric types, designs and qualities that are channeled through converters to their innumerable end uses. Look at the cotton dresses in any store or the cotton fabrics on any piece goods counter and you will get an idea. You will also get an inkling of the responsibility involved in telling the mills what constructions to make.

Then there are the mills which convert their own fabrics in their own finishing plants . . . fabrics such as broadcloths,



The apple label shown above is said to be the first pictorial label ever used on cotton goods.

Courtesy Fruit of the Loom



A nostalgic business barometer.
Courtesy Greenwood Mills Inc.

H. B. CLAFLIN & CO., Corner Worth, Church and West Broadway,

NEW YORK, AUGUST 27, 1864.

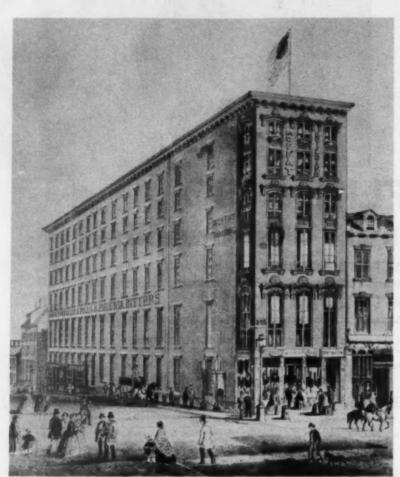
PRICE LIST FOR STHIS DAY ONLY.

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Dear Sir: You will see by the above that Goods continue to advance. Your orders will receive prompt attention.

Classin's price list for August 27th, 1864 contains many names still well known on Worth Street.

Courtesy the Merchants Club



The Mostat Building at Broadway and Anthony Street. The legend states that rooms and offices are available for business purposes at prices from \$100 to \$1000.



The oldest cotton baler in existence at Tarboro, N. C.

Worth Street Story . . . continued

print cloths, flannelettes, twills. Another group of mills is set up to make colored goods like ginghams, denims, coverts and other yarn-dyed types. Still another makes finished products . . . towels, sheets, spreads, curtains, blankets, diapers. Each segment of the trade differs so widely from the others that it is to all intents and purposes an independent industry.

This should be borne in mind when you attempt to visualize the functions of the large selling agencies that operate in all the textile markets simultaneously: industrial goods, grey goods for converters, finished goods, colored goods and finished textile products. It is a huge undertaking any way you look at it, and yet it is so amazingly sensitive that such an apparently trivial thing as the wrong package design for a diaper can put a mill at a competitive disadvantage. The wrong color or pattern or quality or price can be ruinous.

How does Worth Street go about its business? To start with, it offers buyers of all kinds of cotton textiles the broadest possible coverage of their needs in the shortest possible time, because of the unique concentration of most of the strong merchandising houses within a stone's throw of one another. Nowhere else is there an area completely given over to textiles and other soft goods.

Nowhere else is there such a sensitive business barometer. This barometer measures fabric trends as well as the status of the delicate balance between supply and demand. Why is this? What has Worth Street got that is so unusual? Obviously it serves as the eyes and ears and sensory mechanism of the mills. Obviously it has listening posts and connections everywhere . . . its own numerous out-of-town offices as well as key customers in strategic localities throughout the United States. This complete penetration of the trade is supplemented by similar connections with consumer groups, educational organizations, Government bureaus and agencies, industrial engineers, producers of machinery, stylists, designers, colorists, textile chemists and publicists.

There is something even more important involved, and that is the characteristic vertical type of selling which exists only in textiles in its most developed form. Worth Street sells everybody . . . converters, cutters, wholesalers, chains, mail order houses, department stores, Government procurement agencies. Worth Street knows what is going on at all levels constantly and continuously. Nowhere else does the user of textiles stand so good a chance to find the right answers to his most basic questions at the right time. That covers trends of color, style and price before rather than after their effects have become fully felt or developed.

A Two-way Street

Furthermore, Worth Street is a two-way thoroughfare. The way to the buyer is as wide open as the way to the seller. Worth Street acknowledges a two-fold responsibility . . . to the mills as well as to the customers. This fundamental fact underlies the famous Worth Street Rules which are widely considered unique among standard codes of trade practice. Instead of being written by sellers alone, they represent the joint effort of both buyers and sellers.

Another big difference between cotton textiles and American business generally is the prominent part played by textile selling agencies in product development. Many of the progressive houses employ stylists, designers and textile technicians. Others go so far as to maintain textile laboratories right on Worth Street, not only for testing but also for development work.

What surprises the outsider more than anything else about America's great textile street is the important role it plays in actual production. While practices vary, of course, and no two selling agencies are alike, it may generally be said that Worth Street really initiates all production. The mills look to their selling agencies to tell them what to make and when to

make it. The executives at the selling end determine each season's production plans in detail, covering quantities and qualities of each, and specifying weights, styles, colors, patterns and finishes. It is up to the same executives to lay out the looms each week, deciding what constructions each loom shall make and in what quantities. This is the common practice whether the selling agency owns the mill, or vice versa, and applies equally where there is no corporate connection.

The selling agency likewise discharges important financial functions. It almost invariably handles credits and guarantees the mill's accounts. It definitely fixes the cost of sales at the regular commission, thereby relieving mills of uncertainties common to most businesses. It may finance the introduction of new products, defray part of the costs of labeling and packaging, maintain financial records, arrange banking connections, act as financial adviser, even supply mill principals with working capital and permanent capital. Other services rendered include interpretation of Government regulations and tax requirements, traffic management, supervision of advertising, publicity and public relations. You might add Anything that isn't nailed down.

The Worth Street community also includes converters, jobbers, wholesalers, finisher representatives, buying offices and every kind of house that helps design, process and distribute

the products of the mills.

The far-reaching economies of the system must not be overlooked, especially in these days of mounting costs, rising taxes and diminishing returns. Vast overhead expenses are combined in one. Costly services which only the very largest mill units could afford are available to all because they are justified by the total volume of business done by the selling agency. Useless functionaries, overlapping organizations and duplication of effort are automatically eliminated. Instead of ten or (please turn the page)



The Wellington Sears Clipper Ship stems from the days when sailcloth was important.

The well-known Spring Maid trademark recalls the basic part played by cotton in pioneering days.





A view of Broadway from the East Side of Anthony Street.

Coursesy Durand Taylor



Behind the activity in Worth Street are the mills, which produce over nine billion square yards of textiles per year. The Fieldcrest blanket and sheeting mill at Draper, N. C.

Worth Street Story . . . continued

fifteen or twenty mills doing the work separately, there is one office doing the work for all. That is how the benefit of leading technical experts in all branches and the best brains in the business are made available to the mills concerned.

Everything that has been happening recently and that can be discerned in the foreseeable future points to more and more responsibility for Worth Street. The services needed and demanded by both the mills and the buyers are getting more complicated, technical and important all the time. There are many reasons for this. The variety of textile products has grown greatly. The break-even point is steadily rising. There is less margin for error, less room in which to turn around. World conditions continue to be uncertain. New economic

ANNUAL ANNOUNCEMENT.

ANNIAL ANNOUNCEMENT.

Herewith we hand you our Samples of goods, with prices and terms of Manufacture for this senson, and bog that you give them careful consideration.

As you will notice we have made decided improvement in both Stylks and Quality of our goods and we show you a better assortment of Samples than ever before.

We have now on hand a much larger stock of goods than usual and if you will send us your wool early in the season we will promise you goods in a very short time and pledge our hest efforts to please you.

We did last year much the largest Custom business ever done in the State and the close attention which we have paid for the last twenty years to the class of goods worn by our Southern people enables us to supply their wants with entire satisfaction. We do not work any Cotton or Shoddy material, but guarantee all goods we send out to be first class in every respect, and we claim for them that they are of as superior finish and durable quality as any goods of like grade in the l'nited States, while the price is much lower in comparison.

With thanks to our many friends are customers for their kindness and liberal patronage in the past and promising our best attention to their future favors, as well as to the many new friends whom we hope to make this season, we are,

Very respectfully.

CHATHAM MANUFACTURING CO.

An early catalog announcement comprised a handbill with shipping instructions and swatches. This example dates from shortly after the Civil War. Courtesy Chatha

forces connected with national mobilization must be met. Competition is getting keener all the time, not only from other textiles but also from other industries, whose products are constantly vying with cotton goods, for their share of the consumer's inflated dollar.

WORTH STREET CREDO AND RULES

What is Worth Street doing about it? How is the selling agency coming through in this emergency? In many ways. First, the greater integration that has been taking place in selling houses has made the whole Worth Street market more sensitive than it used to be and quicker to react to all kinds of changes and conditions. It is more closely controlled than before Pearl Harbor, so that vital information is more accurately and rapidly available. Worth Street has also sharpened its techniques of discovering and stimulating new uses. More intensive promotional methods have been devised. Closer trade relationships with more intimate personal contacts have been fostered. Everything possible is being done to make cotton textiles increasingly varied, attractive and useful to the consumer, and merchantable to the trade. That is the Worth Street way today.

Worth Street is like a great university that runs on the honor system. This is by no means a farfetched analogy. Sales reaching millions of yards are made over the telephone without records or witnesses. A price is agreed upon between the buyer and seller, whoever they may be; for instance, the mill and the converter, or the converter and the manufacturer.

While the deal is being closed, the market may shoot up or tumble down. That can happen before the parties to the transaction hang up. Yet neither would ever budge from the agree-

Mr. James Wesley Rearden has completed eighty years of service with one mill, the Graniteville Company, Graniteville, S. C. "I like my work, I like the people I work with, I like the company I work for, he says.

Courtesy McCampbell and Co



ment, regardless of profit or loss entailed. The philosophy, the credo, the lifelong loyalties to American textile traditions make it unthinkable for anyone to kick over the traces.

People from other industries are amazed at the magnitude of textile transactions conducted without contracts, frequently without written records of any kind. They wonder what there is about Worth Street that is responsible for the high ethical plane on which business is done.

Maybe the answer lies in a sort of guild spirit that pervades the length and breadth of the cotton textile market. The merchants of the district are proud of their product, proud of the mills they represent and proud of their mercantile traditions. King Cotton is not merely a slang phrase. It is the source from whom all blessings flow. It is the symbol of one of the greatest natural products of our native American soil.

This allegiance to cotton must not by any means be interpreted as a disposition on the part of Worth Street to enter into the so-called battle of the fibers. Nothing could be further from the facts. A huge yardage of fabrics woven from manmade fibers is produced on cotton machinery, many cotton mills have a big stake in these goods and Worth Street firms merchandise them annually on a large scale.

Perhaps because it is a grass roots industry, its merchants

For three quarters of a century Joshua L. Bailey has merchandised the fabrics of fine mills, Erwin Mills among them.





The Nelo trademark recalls the traditions of Swiss weavers who brought their skills to this country over a hundred years ago.



Founded after the depression of 1929 Logantex has specialized in white piece goods.

SOME FAMILIAR WORTH STREET TRADEMARKS AND LABELS

are highly and ruggedly individualized. You will not succeed in finding a trade that is more highly competitive. At the same time, you will go far before you find any other commercial calling where competitors are so friendly and so unfailingly cooperative in the common cause.

The compactness of the market undoubtedly is one of the subtle motivating forces. Practically everybody who is anybody eats in one of three clubs . . . The Merchants, The Arkwright or The Wool Club. (Don't be misled by the name Wool Club. Wool merchants eat uptown.) Even the most keenly competitive type of operator is bound to be fair and square and considerate in his competition when he meets, eats and drinks with his competitor, and works for the general good of the market with him. This attitude is further reflected in the competing sales offices in cities all over the country.

There is also a keen consciousness of the importance of textiles in the history of the United States and in the contemporary life of America. High officers of the Army, Navy and Marine Corps responsible for procurement have given the whole industry the very highest praise. Here is how the Quartermaster General of the Army in World War II put it:

As never before in American history, this is a Quartermaster's war...a war of production and supply. Exclusive of armament and munitions, the greatest burden of supply rests upon the textile industry. No one knows this better than the Quartermaster Corps, for it is the biggest textile buyer in the world.

Rear Admiral Young of the Navy Supply Corps said the same thing in different words:

The fabrics produced by the textile industry are as essential to victory as are guns and ships . . . The progress made in the conversion of the textile industry to war production is a significant victory in this war of supplies.

Nothing reveals the whole approach of the market and its

basic philosophy more clearly than the famous Worth Street rules. They have been referred to again and again as without precedent or parallel. The only factor that made these rules possible is the compactness of the area, the guild spirit of the merchants and the credo which puts the interests of the mills' customers on a parity with the mills. In fact, the buyers help to write the rules with the sellers. The front cover of the last edition of these rules notes:

APPROVED AND PROMULGATED BY

Textile Fabrics Association

The Cotton-Textile Institute, Inc.

International Association of Garment Manufacturers

Southern Garment Manufacturers Association, Inc.

Union-Made Garment Manufacturers Association

The American Cotton Manufacturers Association

The National Association of Cotton Manufacturers

Cotton Manufacturers' Association of South Carolina

New Bedford Cotton Manufacturers' Association

The Wholesale Dry Goods Institute, Inc.

National Association of Purchasing Agents

Textile Brokers Association, Inc.

The Association of Cotton Textile Merchants of New York

This effort to standardize and regulate procedure goes back to 1910, when the adoption of a standard sales note was first (please turn the page)



The rebuilding of 40 Worth St., in accord with present-day needs.



At no time in its long history has Worth Street been more impressive, in architecture or in achievement, than today.

Worth Street Story . . . continued

proposed. That was eight years before the founding of the Association of Cotton Textile Merchants of New York. It was not until 1935 that the rules were written. They were revised in 1941.

To get an idea of the magnitude of this undertaking it must be remembered that they apply to 90% of all goods sold in the primary cotton textile market. This huge volume of business is the output of some 1,200 mills under approximately 800 separate and distinct ownerships. When you learn that the United States Army Quartermaster Corps buys 10,000 separate textile items . . . mostly cotton . . . you get a further idea of what the rule writers were up against. What they have accomplished has been of priceless benefit to the whole economy of all the industries allied with cotton textiles. They have set up a body of fair trade practices which have become the bible of buyer and seller fair trade. The rules consist of a standard textile sales note with detailed specifications for all

the fabric types and with a provision for arbitration under the General Arbitration Council of the Textile Industry.

The rules postulated that the industry had chosen arbitration rather than litigation as a means of settling its differences. Nor must it be forgotten that the advantages this course brings are speed, privacy and economy. Perhaps the greatest boon is in having disputes settled within the industry by men who are qualified by expert knowledge and market experience to decide matters fairly and equitably.

Underlying these rules is a social consciousness, a realization of the country's needs and a sense of responsibility that extends far outside the limits of the market itself. In one direction this responsibility goes back of the mills to the cotton farmers. In the other it looks beyond the cutters, wholesalers and retailers to the ultimate consumer for whom the show is put on the road. The Worth Street Credo and Rules set a pattern for industry which exhibits the American way at its best.



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JUST HANG IT UP!

By Which Hangs a Tale of Disciplined Fabrics

AMID THE CLAMOR about the new miracle fibers and fabrics which crowd the lexicon of fashion, it is restful to encounter the stark simplicity of the name *Disciplined* Fabrics, the new Bates' baby. Somehow this word, free from technical mumbo-jumbo, stimulates the imagination! It is an eloquent word, suggestive of forward progress, of training, of patient but firm correction in the interest of perfection; the stuff of which breeding, in fabrics as well as the human race, is made.

Nor is Disciplined in this case a copywriter's fancy. For at face value, Bates ushers in a new achievement in the character, wearability, service and performance of cotton fabrics. This total result, and its apt designation, is arrived at by the recently developed ability to modify the cotton fiber by internal resin reactions, producing a new class of fabrics. Cotton, modified along each of several possible lines, behaves in each with quite different manners than does natural or normally finished cotton ... especially in resilience and absorbency. Recognizing these varied properties, Bates has designed fabrics which capitalize on the favorable properties and minimize the unfavorable. Though the chemical treatment is done nearly at the last stage of production, yarn and fabric has been designed and controlled up to that point so that the final product has the optimum desired characteristics. So complex technically, and so inter-related are the many factors of wear-resistance, drape, comfort and maintenance, that Bates has decided to use the single word Disciplined to denote the combined properties in the most desirable

balance. The fabrics made and sold under this name may vary from crisp sheers to rugged outerwear constructions, but all are designed and controlled for maximum total performance, utilizing the properties of chemically modified cotton.

What are the features which change the face of these cottons and bring the projected millennium closer to the consumer? Generally speaking, fabrics treated in this way retain their shape and form in service, cleaning and storage. They recover easily from creases and remain unwilted after the ardors of successive wear. Not only do they stay crisp and immaculate, resisting soiling and water-borne stains, but they are also relatively impervious to mildew or the harmful effects of perspiration and cosmetics. In short, these fabrics are guaranteed to behave well under all trying circumstances and to go to the laundry with equal aplomb. They launder easily with little scrubbing; they call for no starching; they dry quickly and press easily. And they will retain their as made dimensions, shrinking less than two percent in standard tests.

Surely if practicality, easy wear and a bandbox look are the ultimate in cotton apparel fabrics, a tremendous step forward has been taken in achieving it. Fortunately this has not overshadowed the ingenuity of textures and designs which are in the avant garde of fashion. Altogether, Disciplined Fabrics, styled in a useful variety of smooth and surfaced cottons, make a completely satisfying contemporary package, summed up in the telling headline, just hang it up!



Sun Country: a gay plaid design of washable colors is one of the new Disciplined cottons by BATES.

Variety of Factors Point to Increased Demands for Cotton

Any astute observer with his ear to the ground can list a number of factors which are operating to bring cottons for apparel and home furnishings to a new high. Let us examine a few of these.

COTTON WASHES

The use of the washing machine by the American housewife has increased tremendously. The phrase just throw it into the washing machine has become a cliché in the average home. This is pointed up even more with the general availability of laundromats. Can anything be more favorable to the cause of cotton garments than the ever-widening use of washing machines? People know that cotton washes. They are secure in the knowledge that cotton is an honest fabric. Cotton washes, and with a washing machine in innumerable homes the law of going along

Significant straw in the wind blowing favorably for cotton has been the insistent and growing demand over the past decade for fashion denims and corduroys. This acceptance, especially of denims, continues unabated, and the trade does not seem able to keep pace with the public's ap-

petite in this direction. Refinements and variations of denim seem to have a limitless number of applications. Factors of price, comfort and washability, in addition to the factor of style, certainly enter into the situation but the fact is that the demand for styled denims keeps gaining. with the easiest possible conditions makes it inevitable that cotton will be used more and more widely.

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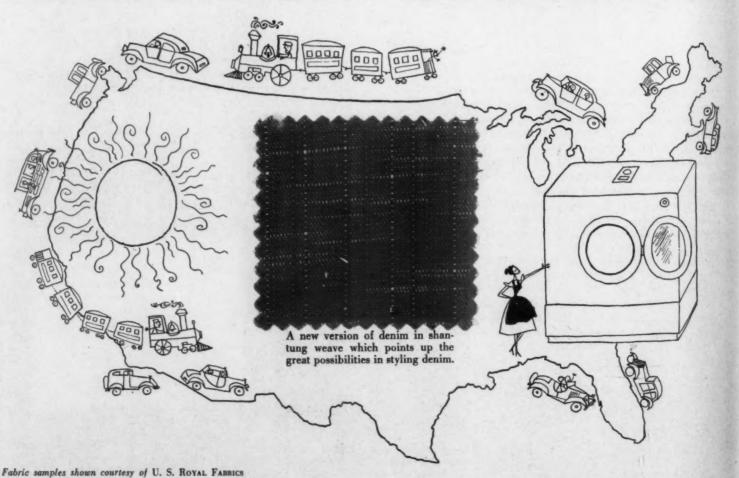
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As the population shifts to the suburbs...and it is shifting at an eye-opening rate... further consideration must be given to the extent that casual clothes are necessary for suburban living. We must not forget that long before the mills and manufacturers were aware of cotton's potentialities in fashion fields, the consumers were using cotton work clothes and were pressing for cottons styled to their own particular needs. They took denims from working men, farmers and cowboys and a whole new concept for softer denim adaptations came into being. AMERICAN FABRICS feels that tremendous potentialities still exist in this direction.

COTTONS FOR YEAR-ROUND USE

For some seasons now cottons for year-round wear have taken on more and more fashion importance. Despite sceptics, the demand has increased rather than diminished... and fashion analysts in the stores confirm that this is so. Perhaps it is due to the development of better heating in the home. Today the average home is easily and comfortably heated throughout the



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coldest months. The fact is that between well-heated homes and well-heated transportation vehicles, we spend little time in cold temperatures.

COTTONS IN THE HOME

For year-round use in the home, too, there is a constantly growing appreciation for the bright, light and cool qualities of cotton. Where formerly heavy warmth-retaining floor and window coverings were used, many modern housewives are now favoring the less expensive, more colorful and easily cared for cottons. Some of our most highly regarded interior designers are specifying cotton for rugs, upholstery and window draperies, even where price is not the factor. They like cotton for its freshness and color. Cotton, they say, fits in admirably with the uncluttered look that is aimed for in modern interiors. And, of course, cotton being comparatively inexpensive gives the average housewife a chance to change the décor or furnishings of her home without too much of a burden on the budget. The American housewife does like to freshen up the home if it can be afforded.

COTTONS FOR GOING PLACES

More leisure coupled with greater mobility... use of the auto for going places... are two additional important factors which favor the appeal of cotton apparel. Within the past decade this nation has witnessed the establishment of, firstly, more and

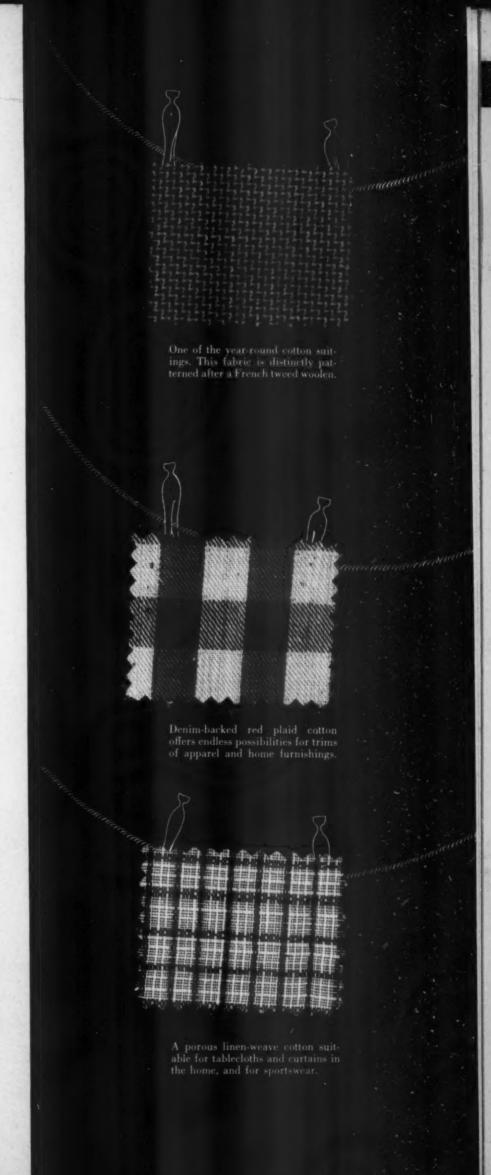


Fashion Cottons for Winter and Summer

more winter vacations for people of all income brackets and, secondly, the week-end, by auto travel, as a vital institution of American life. These developments inevitably mean the more extensive use of apparel adapted for leisure. Possessing the factors of casualness and ruggedness plus unequivocal launderability, cotton is right for getting around.

When Bernice Fitzgibbon formulated her penetrating headline Looks like cotton, feels like cotton, wears like cotton, washes like cotton, in fact, is cotton, she made an epigram. For in these few words she crystallized the thoughts of many of us. For too long we had accepted the virtues of cotton without sufficient articulation and the Fitzgibbon formulation served to point up facts that were always with us.

Changed ways of living, the introduction of more and more modern conveniences, a desire for uncluttered simplicity... these all contribute toward wider and more varied uses of cotton in our homes and clothing. We have seen cotton enlarge its scope, moving from work to play clothes and penetrating the highest fashion spheres. We are witnessing cotton moving from the kitchen to the parlor... into every room of the household. Cotton's possibilities are tremendous and are limited only by the ingenuity of our weavers, designers, our converters and finishers, our merchants and merchandisers. Never has an industry had a more receptive audience of consumers.—C. C.



SPUN-DYED RAYON

In most fields of industry the manufacturer creates a new idea or product and then bends every effort toward finding ways to move it into mass markets. In the textile field, many of the fundamentally important new fibers and finishes which have come out of the laboratories are the result of instances wherein the world has come to the technologist and said: "This is our problem; this is the hurdle we have to surmount in order to attain widespread use of our product. Now will you find the way to overcome the problem?"

Another in the increasingly long series of problem-solutions is the new Courtaulds Ltd. development of spun-dyed Fibro, which has just been brought to this country from England. During the past year many developments of interest to the worsted trade have been carried out using spun-dyed (or dope-dyed) rayon staple, in self shades, in mixtures and in blends with other fibers, in addition to those established with yarns spun on cotton and other systems.

The colors have a high degree of fastness to light and washing and, as they are also extremely fast to perspiration, acid cross-dyeing, sulphur stoving, peroxide bleaching, etc., it will be realized why their potentialities are causing great interest among mill men who are looking for something new and something different. Another point in favor of these spun-dyed materials is that their highly desirable fastness properties are achieved at a very moderate cost.

Spun-dyed rayon can be processed as easily as undyed rayon and anyone with experience in handling undyed rayon should be able to handle it with ease. The usual practice is to convert the self shades into top in the normal manner by carding, intermediate gilling, combing and finisher gilling. If mixture shades are required these are obtained by introducing four extra gilling operations prior to the ordinary drawing sequence.

A Big Range of Color Combinations

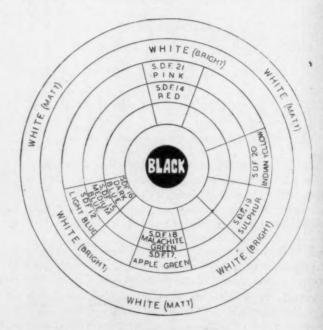
The color mixing possibilities of this spun-dyed range are very great and many attractive shades of both near-solids and heather mixture types have been produced. Even a casual inspection of the range will suggest many ways in which, from a color point of view, mixing could be carried out . . . two-color mixtures, three-color mixtures or even mixtures with more than three components.

Each of the solid shades could be blended with either white, grey (that is, a mixture of black and white) or black to produce light, medium and dark tones of the solid shades, the depth of tone depending on the amount of white, grey or black added to them. Any two solid shades in the range may be mixed together and in this way thirty-six combinations are possible. The percentage of each color present in any one combination may be varied and thus a yery large number of binary mixtures may be obtained. With two-color blends of this type, the variation of the percentage of each component present in steps of ten percent produces ranges of nine different and distinct gradations of the original blend.

Light, medium and dark tones of any of these mixtures may be produced as with the solid shades by the addition of white, grey or black respectively. The number of possible combinations of three solid shades together is 84 and any one of these mixtures may be extended into a range by varying the percentages of its components.

It will be realized that the blending possibilities of this spundyed *Fibro* range are very great. Multi-color combinations of four or more components could be produced, but it should be noted that increasing the number of components in a blend generally reduces the clarity or purity of the ensuing shade.

The shades produced by mixtures of spun-dyed Fibro show that, broadly speaking, they fall into two classes: those which



COLOR BLENDING CIRCLE

give a solid or near-solid effect and those which give a mixture effect such as is usually associated with slubbing dyed worsted mixtures. The degree of solidity attained in these blends appears to depend on the following three factors:

First, the juxtaposition of the components in relation to the color circle; that is, blends of sulphur yellow and Indian yellow would produce what would appear to be solid shades, whereas blends of red and medium blue would give definite mixture effects.

Second, the relative strengths of the component colors; that is, blends of light blue and medium blue or blends of medium blue

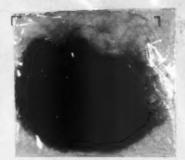
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blended by BRODNAX MILL INC.



Dark Blue



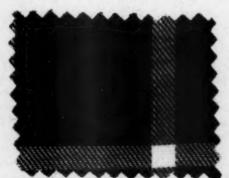
Cerise blended by BRODNAX MILL INC.

Some Examples of Spun-Dyed Fibro 11/2 Denier 17/16" Staple

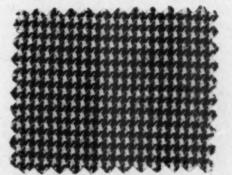




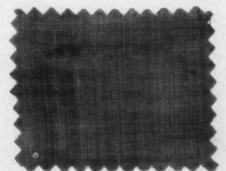
Unconditionally washable with perspiration-resistance and fastness to the sun's rays are the features of these 100% spun-dyed Fibro checks by LANKENAU. They have found special acceptance in the back-to-school lines and children's wear fields.



Spun-dyed Fibro and white rayon men's shirting by CONE MILLS guaranteed colorfast and washable. It also has the Avcoset finish.



Both white rayon and spun-dyed Fibro make up this two-tone hound's tooth check suiting by J. P. STEVENS. Washability and colorfastness are assured.



To get this new subtle coloring of a true shantung weave, spun-dyed Fibro was used and blended with white rayon. By SOUTHEASTERN COTTONS.

ACTUAL EXAMPLES OF NEW COLOR TECHNIQUES IN THE BLENDING AND WEAVING OF RAYON

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and dark blue would give shades with good solidity, whereas with blends of light blue and dark blue mixture effects are produced in which each component is clearly visible to the eye.

Third, the dimension of the fibers used; the finer and shorter the fibers, the more easily is apparent solidity obtained. . . .

Since it has long been conceded that the brightest future for chemical fibers lies in the direction of blends, the best brains in textile laboratories have concerned themselves with the problems of how to make existing fibers take kindly to their fellows. One of the toughest nuts to crack was that of cross-dyeing much more widely than was possible six months ago; true, some startlingly beautiful effects have been obtained through the coordinated efforts of technologists in the chemical plants and dye houses, but those closest to the consumer were aware that a greater market could be tapped if the fiber could be made more easily blendable.

Some Over-dyeing Techniques

For several years, spun-dyed black Fibro has been used in conjunction with undyed Fibro for piece-dyed fabrics; a new extension of this is the use of a third fiber such as cellulose acetate staple fiber to produce a black-Fibro-white-Fibro cellulose acetate staple fabric with the fiber types blended in fiber form, in yarn form or in both to produce a basic grey fabric for the production of ranges by selective over-dyeing.

A particular example of this kind would be a block check dress fabric employing the following three yarns in warp and weft:

- (a) 100% undyed Fibro.
- (b) $33\frac{1}{3}\%$ spun-dyed black Fibro; $66\frac{2}{3}\%$ undyed cellulose acetate staple.
- (c) 100% black cellulose acetate staple.

A fabric of this type could be dyed Fibro way, acetate way or both ways to produce three piece-dyed color ranges. In considering the piece-dyeing possibilities of these spun-dyed Fibro combinations, it must be remembered that all these colors retain their affinity for direct dyes and so only the black may be used safely for selective over-dyeing with dyestuffs which dye Fibro.

Blends of spun-dyed Fibro and wool have been successfully used for dress fabrics and in the hosiery trade. The fact that spun-dyed Fibro is fast to cross-dyeing with wool-dyeing colors has made possible a cheaper method of producing a range of heather mixture shades for the half-hose trade by garment dyeing instead of the usual slubbing dyeing procedure. This is achieved by choosing a suitable spun-dyed Fibro mixture shade and blending it 50/50 with undyed wool. After knitting, the wool content of the half-hose may be dyed black, navy, brown, green, maroon, etc., to obtain a heather mixture range. The obvious advantages of this method are that it greatly reduces the number of yarn shades in use and it increases the flexibility of the garment stock.

Fabrics of a new hand, a new color range, a new pattern concept are now possible; the value of spun-dyed Fibro has already been proved not only in England but right in this country. It has passed the most critical tests of both converters and manufacturers, and a number of the nation's most reputable apparel manufacturers are making spun-dyed Fibro cloths into garments which will be featured by outstanding retailers this Fall.

Ever since the first issue of AMERICAN FABRICS it has been our expressed belief that a large part of the growth of the fabulous American textile industry lies in the hands and the brains and the resources of textile technologists. In spun-dyed Fibro we have still another example of how these creative thinkers can broaden the solid base and increase the towering height of this industry and its related fields • END

Is the Textile Industry Like

The Man in the White Suit?

THIS DELICHTFUL ENGLISH SATIRE made a deep impression on our susceptible editorial minds . . . out on a busman's holiday. We were entertained. We were also bothered by a parallel to the affairs of our own textile mills, so that the Man In the White Suit became a parable with a tempting text for editorializing on Creative Thinking in our industry.

For the benefit of those who have so far missed this funny film (the grapevine tells us there are few in the textile business who have) we will give you the plot and point. There is in this movie a harassed mill owner trying desperately to borrow money from his fiancée's father so that he may reproduce, on a mass scale, the distinguished patterns of old hand-loomed fabrics. His negotiations are inadvertently frustrated by a genius (hiding behind a menial job) who has surreptitiously been working in the laboratories with bubbling test tubes. His objective is an indestructible fabric . . . one that will wear forever and need no cleaning. Eventually, by sheer persistence, he worms his way into the future father-in-law's mill and succeeds in shaping the suit of the future. This revolutionary fabric throws the British textile moguls into panic as they face the prospect of extinction.

Apart from the obvious moral, there is a corollary. In the technological stampede towards durability and the poor man's sartorial paradise, many important values which make for the textile industry's survival and prosperity can be trampled. Don't get us wrong! Nobody has cheered and applauded technological progress louder than we have. It has been our privilege to keep pace with it every step of the way and, as children of our era, we are ever intrigued and excited by the ingenuity of our textile technologists. Our job is to report, interpret and encourage their valid efforts. But on the other hand our credo is that Fashion Begins with the Fabric and since fashion is the offspring of design, this is a plea for continued evaluation on the level of Creative Designing and Creative Thinking. It has always been our contention that this is the important level of emphasis and that therein rests the prosperity of the textile industry. That is why American Fabrics has repeatedly raised the issue of Creative Starvation vs. Creative Thinking and why it has consistently urged an inspirational and thematic design program such as District Checks, Tartans and Paisleys.

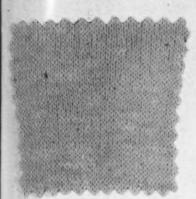
In short, let us continue to experiment towards functional perfection but let us not forget that in the rigidity of a chemical viewpoint there is danger of attrition. Let us not forget that our survival rests on the flux of fashion ideas and the vitality of our inspiration. Otherwise we will be like The Man in the White Suit—a case of life imitating art.—The Editors

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Half Dynel and half Vicara produces the buttery soft hand of this HELLER jersey with qualities of washability, moth and mildew-resistance, wrinkleand flame-resistance. If pleated, the jabric retains the pleats permanently.

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Made of Dynel, nylon and cotton, this fabric of a challis construction is designed for blouses and sportswear. It is one of the BATES' Disciplined fabrics. Complete washability is only one of its many appeals for the consumer.



Chosen for Dynel's inherent quality of fire-resistance, this drapery and bedspread fabric has the added advantages of ease of maintenance. The new Superliner United States will be equipped with this fabric by THORP.

PROGRESS REPORT ON DYNEL

Dynel has during the past twelve months entered the market in a number of new fields and new forms. We here summarize the most important facts regarding its present use, availability and consumer acceptance.

In our issue No. 17 we prepared a report on Dynel, most newly developed Acrylic Fiber. Many fabrics were then in the preparatory stages and commercial production was still limited. But enough samples were available to indicate the high versatility of this fiber and to enable us to project its logical end uses. It was then at the stage of a debutante whose talents and beauty gave great promise.

FOREMOST IN EVIDENCE ARE the contributions in the field of domestics. We reported even at the beginning that Dynel had such covering power that it could be woven into a wonderfully warm blanket. The Dynel blankets in the market are proving desirable because of their strength . . . appealing because of their lightness and softness of hand. Moreover, the inherent resistance of Dynel to moths, to acids and alkalis are a great boon to the housewife. Pepperel has introduced these blankets in regular and summer weights. North Star has blended 50% Dynel with 50% wool (Dynel has a remarkable affinity for other fibers) into blankets which are meeting with favorable acceptance. And Dynel acts resiliently and effectively as filling for comforters. It is in evidence for full-size comforters and cot-size products covered with all-nylon. Here again Dynel's virtues add up to domestic felicity for the comforters can be laundered easily and are free from tendency to mat; nor do they lose their bulk. When nylon covers a Dynel filling, drying is exceptionally fast. In the same category are Dynel-filled pillows which show greater resilience than any filling except down.

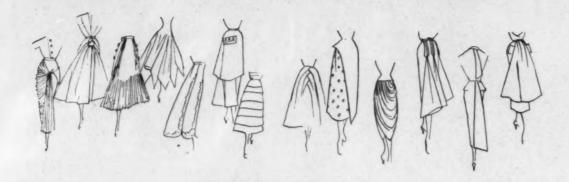
IN DRAPERIES DYNEL HAS an added dimension of fire-resistance ... a particular advantage to shipping lines, hotels and other public institutions. Already some thirteen and a half miles of Dynel draperies are hanging in a ship of the United States

lines made from fabrics which are available both screen-printed and roller-printed.

AND WHAT ABOUT APPAREL? Since fiber and fabric are so deeply identified with fashion, it is interesting to watch Dynel's emergence in the apparel market. At the moment men's hosiery is the most conspicuous Dynel product. The sale of approximately half a million pairs of 100% Dynel hose a month speaks eloquently for its consumer acceptance. They feel soft as wool, have high abrasion-resistance, shrink-resistance, moisture-absorbency and bulky resilient hand . . . all the properties which make for comfort and long wear.

Next in acceptance are suiting fabrics made of a blend of acetate, rayon and Dynel. (Remember, we pointed out that mills can retain the marked character of the initial fiber while adding the advantages which are inherent in Dynel.) There are fabrics for jackets and sportswear with greater abrasion-resistance, stain-resistance and crease-resistance than those of previous blends. This gives the manufacturer an opportunity to offer a time guarantee and makes for a ready acceptance in the boys' wear field.

A GLANCE AT THE WOMEN'S FASHION field gives proof that Dynel flexibility crosses all fiber boundaries. This field is by no means the last in importance; perhaps it is greatest in scope. Here the easy blendability of Dynel is noteworthy. Witness Dynelon, a blend of cotton, Dynel and nylon, which has something of the drape and feel of wool combined with newness, strength and lightness. The achievement here is not only of total effect, but effect obtained at less cost. A successful experiment has been made with Dynel and Vicara jersey, the end result of which is quality plus shape-retention, softness of hand and other practical assets which Dynel bestows on fabrics.



CREPE IS SUCH A FEMININE FABRIC

With a trend toward the recurrence of softer fabric textures, the renascence of crepes may be one of the answers to Creative Starvation.

THE RECURRENT EMERGENCE of crepes, a favorite classic among fabrics, into the upper bracket regions has set us thinking afresh about the historical pattern of fashion. Like history, fashion repeats itself and the initiated seem to be endowed with a quickened perception of its beat.

This may explain the sense of timing which invariably mystifies the outsider who wonders about this ability to synchronize production with the apparently spontaneous consumer acceptance of a fashion idea. This faculty is of major importance in a volatile, capricious business where to be ahead of one's time is to invite failure; to be late is an anti-climax; to anticipate and catch the exact moment of a fashion occurrence constitutes an act of CREATIVE THINKING as potent, in many instances, as a new approach to color, design and construction.

This faculty of adjusting the tempo of operation to the delicate movements of the fashion pendulum has been called for want of a better phrase, fashion sense. It is not an act of omniscience nor of science. No mathematical equation exists to determine the exact span of time in the revival of a line, a texture, a fashion feeling. It is primarily predicated on an awareness of the repetitive rhythms of fashion whose history is cyclic.

The so-called talents of the fashion world seem to have a sharpened intuition which is, fundamentally, a perception of reaction in the making . . . reaction conditioned by the social and economic mood, by society's fermentations and inherent desire for change. It is conditioned by the momentary mood of the feminine world. One factor is reasonably certain, and that is the eternal desire of women to be pretty and to enhance their femininity. Sometimes this takes the form of a nostalgic return to

the fashions of the past which our creative designers transmute into new excitement and . . . a fresh buying impulse.

An immediate case in point, directly in our own line of observation, is the promise of a recurrence of softer textures, a perpetually desirable medium for the soft and clinging silhouette.

Notable in this trend is the quiet reappearance of crepe, the ideal light-weight fabric, characterized by an intrinsically interesting crinkled surface. This straw has been blown about in the wind for quite some time. It was implicit in the pronounced existence of its opposite, the stiffened, starched look of the crinoline. And as we reach the climax of the circular look, a change is indicated . . . a change in the inevitable direction of the soft and elongated line, rightly interpreted in new, flowing crepes.

Apart from the logical dictates of fashion evolution and the suitability of crepe as a medium of expression, it has been a basically appealing fabric throughout the years, and self-perpetuating. By virtue of its delicacy and lightness, it is a markedly feminine fabric. It has a unique grace, with an affinity for neck-to-hem pleating and the sheath-like line.

At the moment crepes are still the aristocrats of fashion, bringing a note of elegance onto the scene. They are still in the first flush of their rebirth, destined to become the darlings of the couture and some of the upper-bracket dress departments. But they are definitely in the news as a movement whose surging ripple waits to be turned into an industry-wide wave.

Subject to individual and creative interpretation by the mills . . . subject to opportune timing, crepes can become a vital, profitable theme answering the demands of Creative Starvation. The feminine world is ever hungry for the truly feminine . . . and crepe is eminently such a fabric.



MALLINSON Estrel Crepe has a specially woven construction of acetate and rayon to give a crisp, firm hand and prevent sagging.

wonder fiber



(C42 + H157 + O15 + N5 + S)n

American Fabrics Presents the Wonders of the Great Natural Fiber W



In this hurrying age of vast new scientific developments and achievements, the laboratory has become the temple of a new religion called Synthesis. Burrowing among the mysteries of decay in nature's molds, man has come forth with antibiotics which promise to annihilate many of his age-old scourges of disease and the disabilities of advancing years. Scientists have split the atom and from its mighty energy can destroy mankind by the thousands. They are now solving the greater and more terrible mysteries of destruction that lie hidden in hydrogen. Whether man will live and prosper as a result of his new knowledge, or die and be succeeded by the hardier and less inquisitive world of insects, lies in the palm of the future.

There is no end to man's inquisitiveness today as to what makes matter and how it can be applied to new uses. Chlorophyll, which has rested so snugly in the green of leaves, has been isolated and is now said to banish bad breath, to clean teeth and to destroy body odor. This mania for beneficent qualities of chlorophyll has now been extended to the textile industry. A manufacturer of linings advertises its addition to his product to help keep clothes spring-sweet all year round! Chlorophyll, as its magic properties are further explored, will probably be trained to play fugues as it drinks in the sunlight before many more laboratory years have passed!

The Search for Miracle Fibers

Cellulose has long been used in making fibers known generically as acetate and rayon. During the past decade, man has explored the possibility of using corn, peanuts, petroleum and coal tar derivatives, mixed with water and air, as raw materials for fibers. The new fibers he has made out of them are now being exploited with a vigor and intensity which is leaving the mercantile world breathless as to when the next miracle fiber will appear and what exalted properties it will possess. Gentlemen in two-button sack suits have been sent headlong into swimming tanks to come up theoretically as dry as the last refugee emerging from the biblical Red Sea. With an eager audience looking on, ladies in pleated skirts have divested themselves of these skirts while swimming in a tank to prove that pleats resist this form of divestiture.

All the claims for these new fibers which are emerging full blown every week or so, or which are announced as being in the process of gestation, are couched in superlatives. Miracle was the word first used as the basis for a modest approximation of the values of the earlier of these new fibers. Miracle, however, is today used only by the less erudite in semantics. Roget's Thesaurus has been cast aside for similes he never dreamed of in a more leisurely age. Vast sums are mentioned to prove how costly and intensive has been the research and experiments.

Throughout all this excitement and contention there is one wonder fiber which pursues its age-old way in calm certainty of its noble past and assured future. This is Wonder Fiber W, called in Aramaic, by our ancestors who come into man's ken with the story of creation, KMR. The ancient Greeks called it Erion. The Macedonian Greeks called it Lenos, which the Romans translated into Lana; the inhabitants of Gaul into Laine. The Germanic tribes and the Saxons of England named it woll or wolle. We know its as wook.

Divinely Fashioned

Wonder Fiber W, as we shall term it, is truly a wonder fiber. Surveying its astonishing structure and chemical constituents, one is reminded of that famous line by Joyce Kilmer, Only God can make a tree, as only Divinity could fashion Fiber W. In the language of today's fiber world it may justly be termed a Miracle of Nature, perfected by Man through the ages in the Laboratory of Time. Over all the ages untold billions of humans have masstested its great qualities of insulation against heat and cold, against chilling fog and rain, and against the furies of the elements in all the diverse areas of the world.

Since man, until this present age of great inquiry, has accepted the wonders of nature without delving very deeply into their tremendous mysteries, he has accepted Fiber W from the beginning of time with little curiosity as to the chemical constituents which made it his shield against the elements. It is these very properties, however, which have made it his most important and necessary companion as he has trudged laboriously out of the darkness of unwritten savagery into what is now somewhat ironically called the glories of our present civilization.

Without Fiber W as his protective covering, man could never have ventured into the temperate and northern zones of the world. Fiber W clothed him. The skin and the felt of Fiber W housed him, just as it does some of the people of Mongolia today. The body of the bearer of Fiber W fed him.

Study in Proteins

Professor W. T. Astbury of Leeds University, delivering the Mather Lecture at the annual meeting of the Textile Institute of Great Britain on April 30th last, declared in crisp, unemotional tones of the scientist that Fiber W is "infinitely more wonderful" than anything man has achieved and that Fiber W "once considered dead and uninformative, has become the very life of protein studies and the clue to all sorts of fundamental advances."

Professor Astbury is only one of the hundreds of scientists who are today working unceasingly in many of the great laboratories of the world, endeavoring to unravel nature's important secrets that still lie hidden in the complex Wonder Fiber W.

FIBER W IS A LIVING FIBER. It is made up of those mysterious elements of carbon, hydrogen, nitrogen, oxygen and sulphur which are the very basis of life. They are the basic constituents of all proteins. They are the raw materials of the miraculous antibiotics, of insulin, of pepsin, of the digestive enzymes, and of albumen. They comprise the amino acids, the progenitors of all proteins. There are twenty-three known amino acids in the world and, of these, seventeen have already been discovered in Fiber W.

Fiber W's protein substances are arranged in an amazingly complicated molecular structure. Like all amino acids, they are strung together in a long and intricate chain of molecules, called polypeptide chains. These molecules are linked together with a sulphur bond, one of the strongest of all bonds.

Fiber W comes in a wide variety of diameters and in an infinite number of lengths. Whatever their diameter or their length, they are all the same in their chemical constituents and their physical construction. These fibers vary from one-half to fourteen inches in length. They come from ten to seventy microns in diameter. They have from none to thirty crimps, or fixed waves, to the inch.

THE VITALITY OF FIBER W IS ASTONISHING. It can be stretched ... as it is constantly ... 30 to 50 per cent of its length and it still springs back to its original dimensions. It can be twisted, pulled out of shape, subjected to great strain under the driest or wettest of conditions, and it always returns to its original size and its original form. Fiber W, under tremendous strain, can be ruptured.

It is almost impossible to deform it permanently.

Long after it has been used for the first time, the fabric made of this fiber is shredded back again and again into fiber so that the last remnant of its original values may be used for man's convenience and comfort.

FIBER W IS THE MOST ABSORBENT OF ALL FIBERS. It absorbs up to 30 per cent of its weight in water without becoming appreciably damp. This makes it an ideal insulator because the fabric made of Fiber W sheds or absorbs water and creates an air wall between the skin and the outer air which, in turn, maintains body temperature at an equable level however outside temperatures may vary.

FIBER W IS THE MOST WRINKLE-RESISTANT OF ALL FIBERS. Its chemical elements, locked together in spindles, have a great affinity for one another and a determination to fold together as nature has arranged them. To Fiber W wrinkles represent a deformation and a displacement of neighboring molecules which is resented. As fast as possible, Fiber W shakes out the wrinkles which prevent it from resuming the natural folds of its molecules. It does this most effectively when at rest on a hanger, where it may feed upon air and moisture.

FIBER W HAS THE GREATEST WARMTH WITHOUT WEIGHT. This means that man can be protected from the vagaries of the climate without great and uncomfortable bulk. This warmth results from the millions of air spaces that its slightly hairy and compression-resilient structure enclose. The heat emanates from the body and is held as a shield against colder outer air. This is what has always made blankets of Fiber W incomparable. Fiber W resists permanent compressing or flattening which would reduce the number of air spaces, thus reducing resistance against the outer colder air. In sleep, the body's resistance is always lowered. Action which speeds the blood and generates body heat is suspended. The Fiber W blanket, until its last days, holds the body heat within the safe, protective enclosure of air spaces provided by a living fiber.

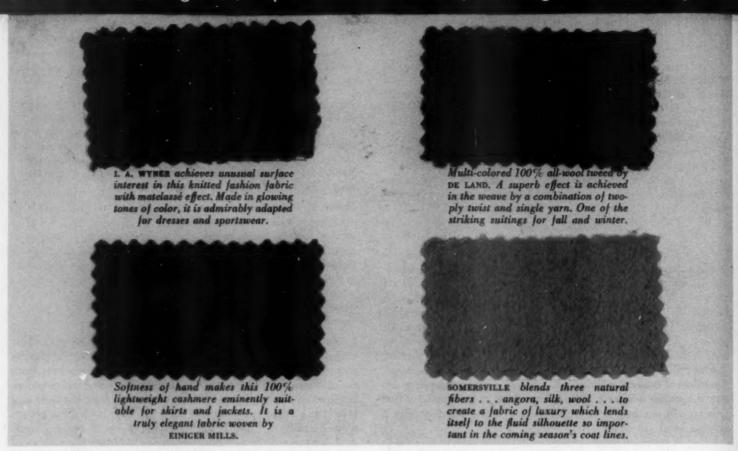
FIBER W TAKES DYE MOST BEAUTIFULLY AND PERMANENTLY. It has more active chemical groups eager to combine with fast dyes than any other fiber. It drinks in dyes until it is saturated to its very core. Acids of the air, soil, perspiration, all have great difficulty fading or changing the color. Fiber W can be dyed in the fiber, in the top, in the yarn or in the piece . . . and all can be

(please turn the page)



Various types of epidermis structure of Fiber W, five hundred times enlarged

Character, Elegance, Depth of color, Diversity of weight, Hand, Drapability



Wonder Fiber W . . . continued

cross-dyed to obtain brilliant and multiform effects.

Fiber W has a rich luster, or bloom, which it never loses during a long and arduous life. This bloom is a reflection of the essence of life... the proteins of which it is made. Even in the last days of its old age, wool lives on sunlight, air and moisture. It enjoys an occasional steaming; it rests and renews its youth in the fresh air, free from crowding against other garments.

FIBER W IS NON-INFLAMMABLE. Under intense heat, it will char but it does not burn with a free flame. The New York Board of Fire Underwriters, in its rules on how to extinguish burning rayon garments, has listed the following:

If the fire's too strong to get the garment off, smother the flames with a woolen blanket, coat or a rug.

Fiber W does not glaze under the iron, which means it does not turn into a stiff plastic substance. Under a moderately hot iron, with a steam press cloth between iron and fabric, Fiber W actually revives, and comes forth with a sleek, bandbox look, with its luster of life renewed.

FIBER W DOES NOT WICK. Now wick is a word scientists use to mean that water is sucked through a fabric immediately on contact, as it runs through a sieve or as oil is sucked up by a lamp wick. Since Fiber W absorbs water up to 30 per cent of its weight before it even gets a little damp, it protects the body from the sharp chill and dangerous lowering of body temperature that accompanies sudden wetting in cold water.

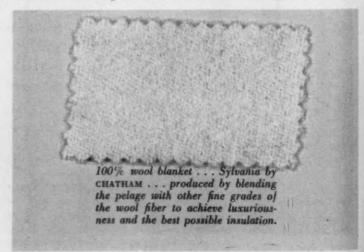
FIBER W IS PRODUCED IN AN INFINITE NUMBER OF DIAMETER THICKNESSES and lengths. With a tremendous difference in degrees of crispness, softness, bloom and resiliency, it provides ideal fibers for thousands of different fabrics in all weights from a two- or four-ounce chiffon weight woolen or worsted to a forty-eight ounce coating.

Fiber W weaves into plain and fancy designs, into beautifully subdued color blends. It makes fabrics in which the weave pattern and the yarn mixtures are the chief beauty. It comes in a soft, fluttering maze of what are known as face finish fabrics...duvetyns, suedes, deep and shaggy fleeces, closely shorn meltons. It provides rich draperies and beautiful upholstery fabrics. Its ductile qualities submit to man's most ingenious and artistic impulses in gorgeous, gay or demure guises.

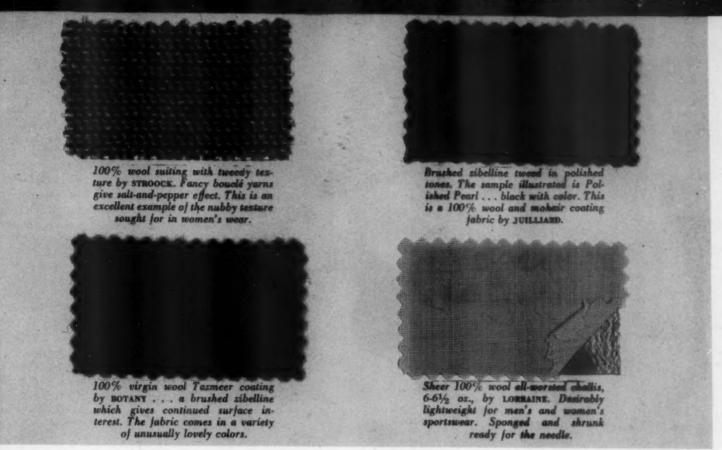
The Persians, the Ottomans and the Chinese all wove rugs of exquisite perfection with Fiber W which today gleam in their original glory on the walls of museums. The tapestries of the Middle Ages, recounting the martial fame of great families or telling the eternal stories of Christianity, are embroidered in Fiber W as fresh, as overwhelmingly magnificent as they were at the end of the long years it took to fashion these pictorial gestures to posterity. The rugs, the robes, the tapestries . . . all have survived the centuries with their wars and orgies of destruction because they were fashioned of Fiber W.

Remarkable Properties

One could continue indefinitely recounting the enormously wide and varied uses to which Fiber W has been put by mankind



reasons why America's great designers like Wool and use Wool



throughout the ages. There is a whole history or series of histories in a recital of the profound effect it has had upon the fate of nations in peace and war; the wealth it has brought to kingdoms and the defeats great armies have suffered because they lacked its protection. But a more important mission is to explore the source of this wonder fiber.

Fiber W is manufactured on living spinnerets. These live and ambulating spinnerets are of the family of the ruminant Ovi, and they are found today in all parts of the world. They are found in the remnants of the Pleistocene civilization and continue to parallel the advance of man up until the present day. These Ovi feed upon the grasses of the earth, however sparse they may be, and they thrive where other animals would perish. As they graze and grow, the fibers or fleeces are extruded through the follicles of their skin, feeding upon the air and the sunlight, drinking in the moisture of the atmosphere.

The Ruminant Ovi

There are literally hundreds of different breeds of these Ovi, carefully cross-bred by man over the long ages to produce fibers ot the exact diameter and length, the correct softness, and the most pristine whiteness needed to make the fabrics, the felts and the knitted products he desires. The result is that today Fiber W comes into the market each year in the specific diameters needed for specific yarns and fabrics. It comes in lengths and in degrees of strength which are adapted to sheer fabrics, heavy fabrics, soft and crisp fabrics. In fact, Fiber W is produced on a tailor-made basis by its meek, living spinnerets to meet the changing fashions of man whom it has served so faithfully and so long.

Nature, recognizing the necessity of protecting the complicated polypeptide chain of amino acids which make up Fiber W, has equipped the molecular structure with an outer serrated hide or skin that resembles the scales of a fish or the overlapping skin of a twig. This prevents breakage and tearing as the Ovi wind their way through brambles, burrs and overhanging bushes.

As a further protection against searing by the sun or breaking, nature has equipped each fiber with a wax covering which is, in effect, additional armor. The ancient Greeks called it Oisupon. The Germans fifty years ago identified it with the name it bears universally today . . . lanolin. Washed off when Fiber W is scoured for conversion into the many products it makes, lanolin becomes one of nature's most potent and amazing of substances.

It is a medicament of ancient and proven values. It is a rust preventative for the most delicate of precision instruments, and in time of war becomes a commodity of prime strategic importance which is doled out with military care into the industries charged with producing for our national defense. Dying trees are fed upon it, and they revive. It is used as a base for medicines to be applied to the most delicate of human membranes. It is used as a stabilizing element where resistance to fungus and other results of spoilage is desired.

In Das Wollfett by Drs. Donath and Margoscher, German scientists, they say: Lanolin, which comes from the sheep, is one of the most natural of foods it is possible to obtain for the epidermis, being so closely allied to our own oily skin secretion.

There is, in fact, a whole materia medica on lanolin, its properties and its uses. These uses date back to the early Egyptians (or before) who used the substance known today as lanolin as a medicine for many skin and other ailments. In the year 50 B. C., Dioscorides, physician to the army of the Emperor Nero, and one of the greatest herbalists of his time, wrote a materia medica that became the basis of all physicians of that time and of the Middle Ages in the eastern world. Dioscorides had traveled widely with Nero's army, and he records his observations on medicinal herbs and animal substances in his book. We are indebted for knowledge of this book to John Goodyear, an English scholar and a great herbalist of Petersfield, who, in 1657, discovered the book inscribed on vellum for the last known time in Byzantium in 521 A. D., and made an interlinear translation comprising 4540 quarto pages. Goodyear sought vainly for a patron to bear the expense of printing, but found none. Dying, he bequeathed his

(please turn the page)

Wonder Fiber W... continued

manuscript to Magdalen College, where it lies today.

In Book II of the five-book treatise, Dioscorides treats of: Living Creatures, Milk and Dairy Products, Cereals and Sharp Herbs. He first turns his attention to the therapeutic properties of our Fiber W which in his day was known as Erion.

In the Elizabethan English of the period, Goodyear translates Dioscorides' treatise on wool as a medicament in part as follows:

The best unwashed wool is ye soft and that which comes from ye neck and from the thighs. Being good in the beginning for wounds, bruises, peeling, black and blue squatts, breaking of bones, being moystened in vinegar and oile, or wine. For they — wool — doe easily drinke up the liquors into which they are dipped, and by reason of ye Oisupon (lanolin) they are mollifying. They are good also for ye headache and for ye paines of the stomach, and of other place, being applied with vinegar and rosaceum.

Dioscorides also highly recommended burnt wools for many ailments and injuries, for repressing excresencies of the flesh, and of drawing ulcers to a cicatrix. But it was Oisupon, the lanolin of today, which drew his greatest attention. Of this he wrote:

The greasiness of unwasht wool is called Oisupon. It hath the power of warming, mollifying and filling ulcers. It is good for the griefs of the eares — it is good also for the corners of the eyes that have been eaten into round about and are scabbed and for eyelids which are hardened and shed their haire.

The history of the Ovis aries, of the order of the Ruminantia, which is today's sheep, the bearer of Fiber W and of Oisupon, is lost in the abyss of time. They are cousins of the deer, the antelope and the musk ox. Fragments which have been found indicate they were companions to man as early as the Pleistocene era. They fed him, housed him and clothed him. Man first used the hairs of

the aboriginal ovi as felt, having discovered that the heat of his hands and pressure locked the hair into a solid mass. When he began to weave no one knows, but it was one of the earliest of his handicrafts.

The ovis ruminantia began their lives in Central Asia. There was a time, they say, when the ancestors of today's sheep roamed the plains of our own continent, crossing by way of the Bering Straits. It was this pathway which sent the camel family northward from America into Asia to escape the ice age, and southward to the peaks of the Andes mountains. The results are dromedaries and the Bactrian two-humped camels of Asia and the Llama, Alpaca, Guanaco and Vicuna of the Peruvian highlands.

Man early began to cross breed the hairy animals which were the primitive ovi. He bred out the hairs and the discolorations, gradually developing what is today Fiber W, the golden fleece of mankind. The Israelites were the world's greatest shepherds. Their flocks were immense. Their breeds and cross breeds were the pride and the wealth of their tribes. The women of the Israelites, and indeed of the known world, were employed constantly and virtuously when, as the Old Testament declares, she layeth her hands to the distaff. So important were the ovi, they became religious symbols, a tradition borrowed by the western world of Christianity.

The Greeks, the Romans and the Persians, with the efficiency which marked their civilizations, had access to the sheep of all the known world and selected and cross bred those which grew the finest fleeces. As the Roman empire made its way from the Mediterranean to the Danube, the Romans and the colonies which they created scattered sheep throughout Europe, making spinning and weaving the labor of all the women of the Roman world.

It is said to have been the Romans who crossed the Tarrentine sheep of the Roman province of Tarraconensis in what is now Spain with the Laodicean sheep of Asia Minor, producing the greatest sheep of all time, the Merino. The Moors during their

THE SPECIALTY FIBERS

VICUNA

Rarest and finest of all fleeces and also the most expensive, the Vicuna, another llama relative, is a wild animal roving the high country land in Peru. Because he is wild, the Vicuna must be killed for his valuable coat.

Only the inner hair is woven into fabric and the fiber is so fine that it equals only one-half of the diameter of the finest sheep's wool. Vicuna is used in coats and blended with other wools. Because of its own natural luster and rich golden brown tone, vicuna is not usually dyed.

LLAMA

The Liams, great beast of burden like his distant cousin the Camel is often called the Ship of the Andes. So valuable are the liamas for freight that only the female is shorn.

The fiber from the Llama is long, soft and silken in quality. It possesses excellent insulating qualities and is used mostly in combinations with other wools for outerwear.

ANGORA OR MOHAIR

Angora, more commonly called mohair, comes from the Angora goat. Originally inhabiting Asia Minor, the Angora goat now is thriving in southwestern United States. Mohair is the most common of the specialty fibers. It is known particularly for its high luster, strength and durability.

Like alpaca, there are two grades of mohair. The kid mohair is used with other wools in coatings and suitings where special textured effects and a thick pile are desired. Because mohair has different properties from wool, interesting effects are achieved when combining mohair and wool. The tougher second grade of mohair is a common fiber for upholstery.

GUANACO

Rare and delicate fleece from the wild Guanaco of South America is soft and pliable. The scarcity of the Guanaco makes the supply limited. With its high nap guanaco is adaptable to outer apparel.

ALPACA

A long, wavy, soft and lustrous fiber is characteristic of the Alpaca, member of the llama family found on Andean plateaus.

The Alpaca is a large producer of fleece; however, only the finer kid alpaca or the underneath coat is used in fine fabrics. Well known in high fashion is the dress or suit fabric known simply as alpaca, a fabric tightly constructed of a characteristic plain weave. Alpaca is also frequently combined with wool in napped suitings and coatings where the alpaca fiber gives a lustrous look to the fabric.

CAMEL HAIR

The world's finest camel hair comes from the two-humped Bactrian Camel inhabiting Asia from sub-zero Siberia to the humid Arabian Sea. It is natural, then, that the fabric should have great insulating qualities in addition to its tensile strength, luster and extreme softness.

Camel hair cloth, known for its warming and cooling properties, is widely used for year-round coats. It is also combined with wool for sweaters, suits, blankets and oriental rugs.

suits, blankets and oriental rugs.

Like other fine fleeces, camel hair comes from the under coat of the Camel. Oddly enough, the Camel is not sheared, but continually drops his fine hair which is then picked up by the keeper.

CASHMERE OR KASHMIR

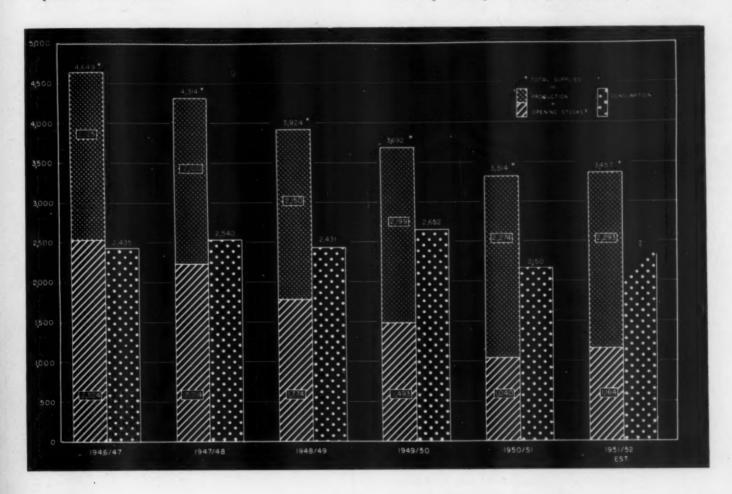
Very fine light hair obtained from the downy undercoat of the Kashmir goat of Tibet and India. The glossy hair is admired for its incredible softness and silky gloss. Hair from the Kashmir is either plucked from the animal or gathered from brush and shrubs during the molting season.

Most often used in combination with sheep's wool, cashmere, because of its excellent wearing qualities and warmth, is used in men's and women's coats, suits and sweaters.

It is interesting to note that Kashmir applies to the Kashmir goat, whereas cashmere is the woven fabric made from the Kashmir goat. World consumption of wool during most of the postwar years to date exceeded annual production and the prewar rate of consumption. This was made possible by the liquidation, over a period of five seasons, of two and one quarter billion pounds of unsold wool accumulated during World War II. Most of this was owned by the British Dominion wool growing countries, and some by the U. S. government, by the United Kingdom and by South American exporters. At the same time world production of wool increased each year as sheep flocks were expanded to meet the rising wool requirements of the world.

During 1951, world consumption of wool fell sharply while inventories of processed wool and finished wool goods . . . accumulated during the inflationary period following the start of the Korean War . . . were being liquidated. This pattern was characteristic of all textile industries.

At the beginning of the current wool season (1951-52), world trade stocks were over 100 million pounds higher than those of the preceding season. This was the first such increase in the postwar period. Consumption during 1952 of carryover stocks of 150 million pounds plus the current world clip would permit an increase of 14% over 1951



World Supply-Demand Position of Wool (Carpet and Apparel) 1952
MILLIONS OF POUNDS, CLEAN BASIS

dominance of Spain, improved the breed after it had deteriorated, and for hundreds of years the wealth of Spain was built upon the merino. It was guarded as the greatest of national treasures, and death was the penalty for trafficking illegally with the fleece or the animal. On the occasions of intermarriage of the Spanish royalty with other European rulers it was the custom to present a few of these sheep as marriage gifts. Thus the merino in various degrees of cross breeds was spread across Europe. Eventually they came into the United States with the Spanish Conquistadors by way of Mexico and into New England with our early colonists.

For generations Spain remained the producer of the world's finest Fiber W. The Order of the Golden Fleece, one of the most distinguished of all orders, was a tribute to the merino. Ferdinand and Isabella pawned the tax income from the merino revenues to finance the voyage of Columbus which discovered America.

Meanwhile England, to which sheep had been first brought by the Phoenicians, was slowly building up, through the Middle Ages, a wool growing and wool weaving industry which was to be the foundation of her riches and her fame as (please turn the page)

Wonder Fiber W ... continued

a world power. This is an epic of its own, beginning with the extinction of wolves by Edward the Elder in the Tenth Century and continuing onward to that period from the Sixteenth to the Twentieth Century when England was the greatest grower of wool and the greatest weaver of woolens the world had ever known. Elizabeth, when queen, decreed that the Lord Chancellors of England should sit upon the woolsack and that nobles should take the oath of fealty to the crown kneeling upon a woolsack, to remind them that the power of England was built upon wool.

There is a vast body of laws and royal decrees governing the ancient wool industries of England. Words, terms and whole sentences which are now a basic part of the English language were devised to describe and control the marketing of wool, or its processing. The Merchant Adventurers of England were organized first to traffic in woolen goods with the Russians and the Turks. The Cistercian Monks in 1193 ransomed King Richard I with wool when he was captured by John Duke of Austria on returning from the Crusades. It was in fact the monks who had preserved the sheep during the dark days of the Middle Ages, when they were the prey of disorder and wolves.

As the centuries rolled by, Spain lost her dominance as a grower of that aristocrat of all sheep, the Spanish merino. The center of weaving moved from Flanders to England. In far off South Africa, there was a Governor of the Dutch Province named Phillips, who had received a gift of a small number of ewes and rams from the famous Escurial merino flock of Spain. When Governor Phillips left for Europe, they were purchased by a Captain Gordon, a Dutch-born military man of Scotch ancestry. He failed to stop the landing of the English at Capetown and committed suicide. His flock was bought by an English sea captain bound for Australia. He in turn sold them to an Australian settler and ex-army officer, named Captain MacArthur.

This was probably one of the most historic events in the long saga of the ovis ruminantia. For these few sheep, a half dozen or so, are the progenitors of the famous Australian merino which has carried to a new high peak the glittering perfection of Fiber W. The Australian merino is today the standard of the world, just as Australia is the greatest wool growing nation in the world. Its incredibly soft and fine fleece is the raw material of the world's fashions in woolen and worsted fabrics.

The largest user of all fine fleeces of Fiber W is the United States. For the empire of woolen manufacturing has continued to move westward during the Twentieth Century. Within the past decade the United States has become the largest user of wools in the world. It is the largest producer of wool and part wool fabrics for apparel, upholstery, draperies, rugs and carpets. Unfortunately within the past decade the United States has fallen from its proud position as the second or third largest grower of fine apparel wools in the world to a point where it must now import approximately 80 per cent of its annual consumption for apparel and 100 per cent of its requirements for rugs and carpets.

At the present time the United States consumes annually approximately one billion pounds of wool as it comes from the sheep at an average total cost of \$800,000,000. Per capita consumption of wool in this country has shown an amazing increase of 73 per cent within the past decade as against an increase of 9 per cent in the rest of the world. The American wool textile industry has the largest production capacity of any country in the world. It comprises some 829 establishments engaged either in the complete conversion of wool into fabrics, or partial conversion through scouring, spinning, weaving or other processes. These industries employ some 150,000 persons who earn an average of more than \$61 weekly, or approximately \$400 million annually.

The value of the yardage produced by the industry is approximately two billion dollars, which is converted into apparel

Wool in the Scriptures

The Chronicles tell us that the son of Reuben took from the Hagarites 250,000 sheep.

All of us recall Jehoshaphat. The Arabians, to do him honor, brought him 7700 rams.

Hezekiah, King of Judah, is reputed to have consecrated 3000 sheep and, at the feast of the Passover gave his congregation 7000 sheep for the sacrifice.

Mesha, King of Moab, was a sheep owner and he rendered unto the King of Israel 100,000 lambs and 100,000 rams, with the wool upon them.

The Book of Samuel tells us that David heard in the wilderness that Nabal did shear his sheep.

Absalom, who came to such a bad end, had his sheep shearers in Baalhazor. You will find this in the second book of Samuel, Chapter 13, Verse 23.

It is recorded in Deuteronomy that it shall be the Priest's due, the first of the fleece of thy sheep shalt thou give him.

Ezekiel, the prophet, predicting the ruin of rich and infamous Tyre, recalled that in Damascus they were merchants in white Wool.

In the Proverbs and in Exodus, we are told that the virtuous woman seeketh Wool and Flax and worketh willingly with her hands. She layeth her hands to the spindle, and her hands hold the distaff.

From the Exodus we learn: And all the women that were wisehearted did spin with their hands, and brought that which they had spun, both of blue and of purple, and of scarlet.

In the Book of Sampson, they spoke of Goliath thus: And the staff of his spear was like a weaver's beam.

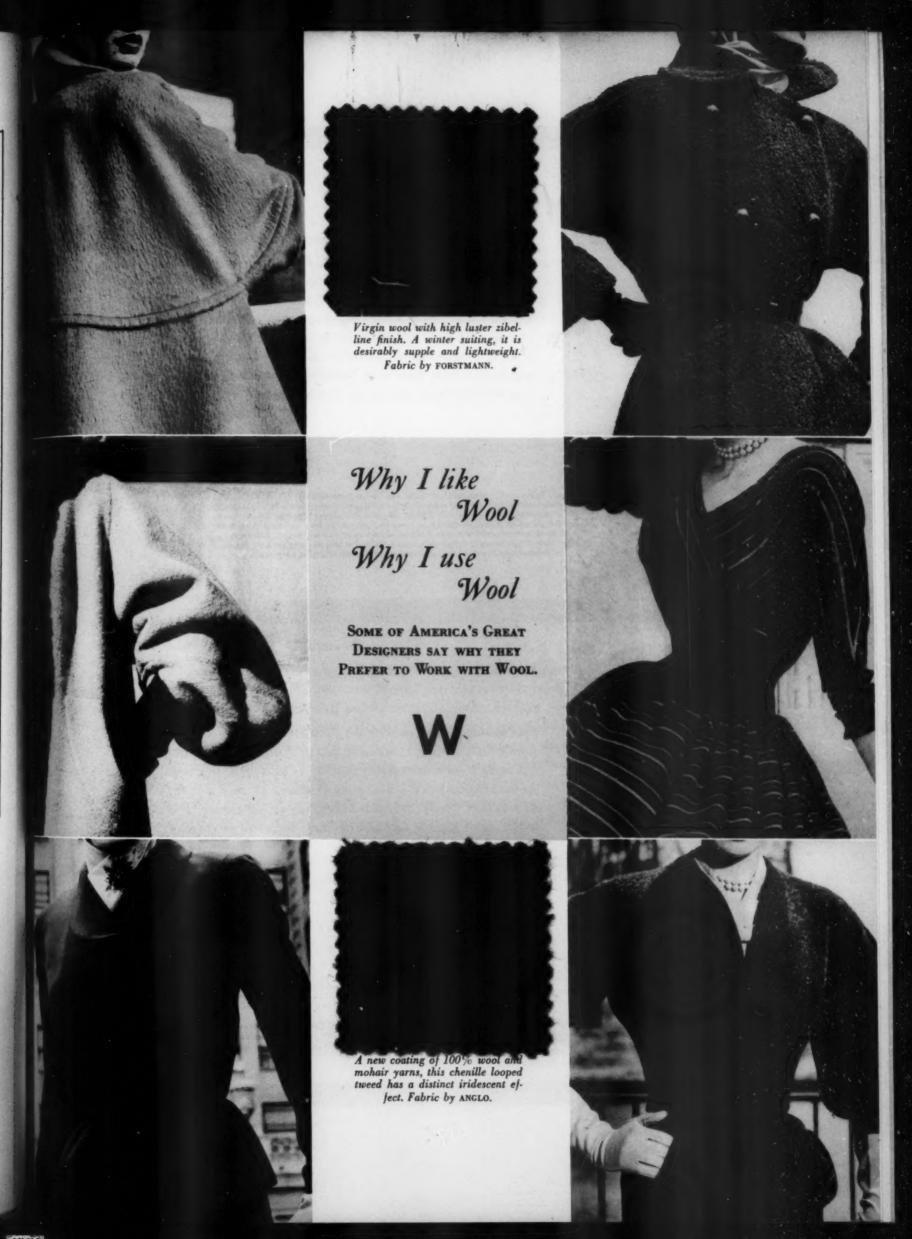
Joseph's brethren went to feed their Father's Flock in Shechem. Being come into Egypt, asked by Pharaoh what was their occupation they said: thy servants are Shepherds, both we and our Fathers.

Having spoiled the Midianites, a part of the booty which the men of war had caught was 675,000 Sheep.

and upholstery fabrics having a retail value of more than $6\frac{1}{2}$ billion dollars. The conversion of wool and part wool textiles into consumer products engages the major portion of the highly paid labor of 500,000 men and women.

In addition to this enormous domestic production and the empire of capital and wages which it represents, the United States imports annually some 20 million yards of wool textiles worth between 35 million and 40 million dollars.

Thus, Fiber W, the golden fleece of mankind whose history began in unrecorded time and which has continued in the arid deserts, the high mountains and the lonely sheep camps of the world, remains one of man's greatest sources of wealth and of comfort. Without it he could not continue to dwell in health and comfort outside the soft climates of the world in peace time and he could not successfully defend himself in the event of war, as history has repeatedly proved.





VINCENT MONTESANO

What do I think of wool? My approach is easy. It is practically the only fiber I use — although sometimes I use silk. I've used wool for twenty-five years and have, with special colors and special designs, given it a new direction. Today wool is just as important as fashion itself because in weave, in color, in surface interest, the fabric contains the style. Wool is so interesting because there is a rebirth each season. Designers and woolen mills must work together and the designer must assume responsibility by inspiring and giving direction to the mill.

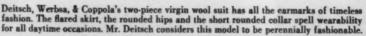
Luxury fabric and extravagant cut make this Monte-Sano fashion a stand-out in the American collection . . . in baby-soft seal cloth of 100 percent virgin wool. This fabulously wide-cut circle coat is flame red, fluid in line and remarkably light in weight. Deep banded yoke line adds style sparkle to cascading fullness at back, centers the tapered push-up sleeves and continues around to coat closing at front. Face-framing collar can be worn high at neckline or in deep lapels. Coat is buttonless and its sweeping lines dramatically feature the beauty of the fabric and the skillful cut. Lined in navy wool crepe.





SAM DEITSCH

Fine workmanship demands the finest fabrics and wool lends itself so wonderfully to expert craftsmanship. It is difficult to put into words, but there is an unmistakable subtlety to wool. It is a grateful fabric for fine craftsmanship. There is a resilience in wool that lends itself to a woman's body; it molds beautifully to her curves; it is accommodating. A piece of fine woolen fabric has a real personality.





CLAIRE McCARDELL

I really like natural fibers. They breathe, they stretch, they drape. You can steam and mold them in any way you wish to achieve the desired effects. The value of the labor that I put into a garment calls for the finest fabrics — and, of course, wool takes color in a fresh, glowing tone, a tone which is never harsh.





Claire McCardell makes imaginative use of fine wool jersey in bright multicolored stripes. Beautifully manipulated to follow the motion of line, the str.pes are used horizontally in the skirt... in wide, swirling arcs on the cross-over bodice detail... in perfectly arranged V lines on the tapering push-up sleeves. Stripes combine black, red, yellow and bright green. Skirt is gathered and very full; bodice is snugly fitted and 1952 neckline is adjustable. Wide elasticized belt is flame red with gilt fastening.

VERA MAXWELL

Wool will always be my first love. Although I often work with cottons, silks, and even some of the man-made fibers, I find that no other fabric lends the suppleness and ease so important to the clothes I design . . . clothes that must not only look well, but must feel as if they belong to a woman's life. Nothing feels more comfortable than a simple wool jersey dress, and nothing looks handsomer over it than a really good tweed coat or jacket; my own favorite costume is a full length coat, with a skirt of the same wool, and a wool jersey blouse matching the coat's facings. And always I have found that a sheer worsted is the coolest thing one can wear in the summer. The Arabs have been wearing their loose wool burnooses to ward off winter's cold and summer's heat alike for thousands of years . . . and the Arabs are right!



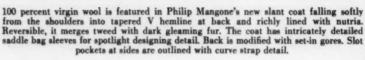


Vera Maxwell's two-piece dress typifies 1952's interest in the softly fluid, 100 percent feminine wool dress for fall. Of sauterne gold wool jersey, it has surplice wrap-around blouse with self bow at the neckline, snug-fitting waistline and tapering push-up sleeves. Skirt features unpressed pleats falling from clustered arrangement at center front.



PHILIP MANGONE

To me, nothing is so satisfactory to handle as wool. Because it is so adaptable, one can mold it to the body's curves. The iron takes to wool and fine tailoring details are made possible. And can you name any other fiber that takes color like wool?

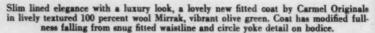






GEORGE CARMEL

What else but wool? Woolens have a softness and drapability. Women love the feel of wool because only from its warmth can come a sensuousness they crave. To me a yarn-dyed woolen fabric has unmistakable look and character — and only wool has the depth of color we require in a fabric. Today, due to machines, wool's limitations are nonexistent as far as weight and weave are concerned. The natural warmth and insulation can't be duplicated. Sure other fibers are good, but you cannot compare a Ford with a Cadillac.





ADELE SIMPSON

Only the master weavers of the world can loom the fabrics that look wintry, but feel light. I like to work with a soft, sleek, weightless suiting, like zibelline, or any other fabric that has depth and warmth without weight. And whether it is a tweed or cashmere type, or velour, it must always be the finest quality.





Smart and svelte — the bright new version of the Spencer suit by Adele Simpson arrives on the fall scene in luxuriously soft brushed velour of 100 percent virgin wool. Wonderfully light in weight and style-right for all fall and winter long, it teams the suit in charcoal grey with a beige wool jersey blouse. The jacket is high cut, snugly fitted . . . has three bone buttons low on the bodice, and deepcut push-up sleeves. Skirt has wide band fitting high on the waist. Rounded pocket detail at sides gives dramatic arch to hipline. Stalk-slim in cut, the skirt has folded-under panel effect at front.

BONNIE CASHIN

Loving texture and color as I do, wool fits into my designing scheme practically all year 'round. I use it for evening wear as well as day. I find that versatile woolens can be as glamorous as they are practical. Years ago, I used wool for evening clothes in the movies. My pet sport . . . travel . . . is made comfortable and carefree, wardrobe-wise, by the careful selection of the right woolen dresses and suits which pack so well. My best friend has been my zibelline suit which serves all sorts of purposes. I could use the jacket over a jersey sheath; the flared skirt is wonderful for evening with a low-neck top. For hats I use a couple of lengths of jersey. In fact, jersey is one of my very favorite barnstormers and I use it for everything from playwear to formal things.

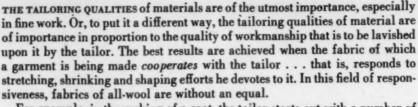




Definitely 1952 in style and fabric mood, this virgin wool cardigan suit by Bonnie Cashin follows the season's important trend toward the loose-falling coatlette and empire-high waistline . . . interprets it in two levels of fine wool fabric. Suit combines textured Mirrak in jacket, with flat textured, cross-dyed Fortuna flannel for skirt and for jacket edging. Wide-banded waistline is high; straight skirt gains fullness by peg-top treatment.

Some of America's Great Men's Clothing Disigners say why they prefer to work with Wool,

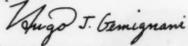




For example, in the making of a coat, the tailor starts out with a number of flat surfaces of cloth and he must accomplish the contours that are necessary for fit and comfort by the application of a heated iron and moisture. On the sleeves the cloth has to be subject to extremes in adjustment. The front edge of the top sleeve must stretch around where it is joined to the undersleeve in order to provide the proper contour. The upper opening of a well-cut sleeve has a circumference that is fully 15% larger than the circumference of the opening in the coat into which the sleeve must be sewn.

The shoulders are another portion of the coat where the tailor can demonstrate his skill, for if the shoulders are properly constructed the entire weight of the coat will rest on the wearer's shoulders near the neck, and there will be no pressure at the outer ends of the shoulders adjacent to the armhole.

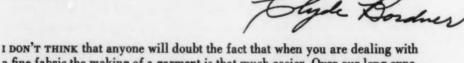
It is obvious from the above that to a designer the tailoring qualities of the cloth must always be regarded as of the utmost importance.



MAN, TODAY, trying to improve on nature's attributes is, in many instances, developing useful substitutes that are finding a place in the lives of a great number of people. However, frequently the substitute is a poor imitation of the real article. Nature has provided so intelligently that it is questionable if man will ever improve upon her designs. She has provided for the comfort of her beings... whether it be in Arctic cold weather or tropical heat... to the extent that there need be no extreme hardship endured by man or wild life.

Primitive man learned from nature the comfort of wool, perhaps first in the use of skins of wild animals, and as he became more civilized he learned the use of its insulating qualities . . . that wool is warm in cold climates and cool in hot weather. Wool is an air-conditioned fiber. Its resilience enables it to maintain millions of air cells between the fibers in the fabric. This gives wool its unique insulating properties. It acts as a thermostat protecting you against sudden temperature changes.

A suit made of virgin wool, tailored with reasonable care, will withstand a great deal of abuse and still come back from the dry cleaner looking as good as new. Since wool by its nature retains life, so too does your woolen or worsted garment. In most instances the fabric far outlasts the fit or style and therefore a coat or suit is seldom discarded because of the cloth, but rather it is the change in style or not keeping that waistline in check which necessitates retirement of the garment.



a fine fabric the making of a garment is that much easier. Over our long experience we have found that there is never a problem with wool. If the basic fabric is woven properly then we can easily tailor it into a smooth and beautiful body covering for both male and female. We like to work with wool in our shops because we know that the end result product is going to show all of the fine hand workmanship that we put into it. The natural bloom of the fibers, the natural look of wool . . . all these are inbred qualities.

There is no other fiber that we know that has stood the test of time better than wool; this is attested to by the fact that we have taken wool in clothing for granted over the centuries. Today, it is a pleasure to have the finest wools in the world to work with in designing clothing with the natural look. With the model in the natural look and the natural wool fiber, we know that we can produce for the American consumer the kind of garment that will fit him well, that will look well on him and that will hold up under varied conditions.

So I believe that you will agree there are centuries of romance behind wool and I know that there will be centuries of romance ahead for wool. One of the most important things for the consumer to remember is that there is nothing that will hold up better or look smarter longer than wool clothing.



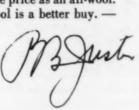
Parquale Trotta

Some of America's Great Men's Retailers SAY WHY THEY PREFER WOOL.

with the countless numbers of man-made fibers that are being developed in the men's wear industry, I feel that it is difficult to analyze intelligently what is good, what is fair and what is poor as a presentation to the ultimate consumer.

Over the period of my 43 years in the men's retail business, in the main in clothing we have always been an advocate of all-wool fabrics. We have told our customers over and over again that there was nothing that could take the place of all-wool. I feel pretty much that way today. As a price proposition in low end merchandise synthetic fabrics may have a spot, but it is difficult for me, when the price of a man-made fiber in a given make borders somewhat on the same price as an all-wool fabric, to accept any substitute for wool.

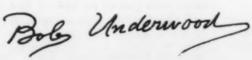
As retailers it is our duty to use our knowledge to buy the best possible value for the customer; and when asked outright by the customer which garment to recommend at practically the same price, I feel that the all-wool is the better buy. As a quality store, we require a better standard of workmanship. This places the price of a non-wool suit at almost the same price as an all-wool. It is my opinion that other than low-end clothing all-wool is a better buy.



UNQUESTIONABLY, and over the ages, wool has commanded top position in the apparel field, and without doubt will continue to rank first in the ages to come. Also, it has held first position as a sales producer in our category of retailing and will undoubtedly continue to remain secure in that position. It is the natural material for warmth in cold weather, and if properly treated and woven it can be one of the coolest materials for warm weather. It is without competition in its versatility in weaving, it lends itself most attractively to rich colorings, and if correctly cared for will render a more satisfactory service than fabrics made of any competing fibers.

Science is beginning to prove that wool can compete favorably in washability . . . it has the necessary non-shrinking attributes, is without a peer in color-fastness, and provides a luxuriousness that is unobtainable in any other material. Wool materials are superior to other fabrics in lending themselves to fine tailoring and needlework, and never present any serious problem when making alterations. Summing it up, I would say that wool clothing deserves to be, and will remain, the choice of the well-groomed American or any American who is looking for the most for his clothing dollar.

The above are some of the reasons why I, as a retailer, like wool. I do think that a polite suggestion to the designers and weavers of men's wear fabrics is in order. If they would *imaginize* themselves considerably more than at present... be more creative in their pattern styling, and more alert in the scientific development of wool fabrics, they would sell more cloth and retailers would sell more wool clothing.



IN MY DEFINITION of quality clothing, based on long retail experience, wool or worsted plays a high-ranking role. The excellence of one hundred percent wool is not only a matter of tradition, but of actual performance.

Wool fabrics respond naturally to the sort of fine tailoring that goes into our Stein Block clothing. Garments tailored from wool or worsted, because of their live, springy content, retain their original shapeliness and fashion features. And alterations in all-wool garments — so important in the retail business — are reduced to a minimum.

My W. Ulichaus







THE CONSUMER SPEAKS ON WOOL

From the nation's men and women AMERICAN FABRICS has gathered the following reasons why consumers like woolen and worsted fabrics.

THE AIRINESS OF WOOL. You can't tie, let alone beat, a tropical worsted suiting for airiness and coolness in summer.

THE BRIGHTNESS OF WOOL. The pleasing brightness of dyed wool fabrics is something to behold since the color is long lasting and its freshness remains permanent.

THE CASUALNESS OF WOOL. A topper or a tartan jacket of wool always has that casual jaunty look, so vital in sportswear.

THE WELL-GROOMED LOOK OF WOOL. A homespun, tweed, cheviot shetland or herringbone gives that groomed appearance to the wearer for school, work or travel. Wool fabrics are acceptable for the cocktail hour and evening social occasions, as well as being ideal for the well dressed country look.

THE COLORFULNESS OF WOOL. Jackets or suits of wool plaid, hound's tooth or shepherd's checks, gun-club checks, over-plaid and blazer stripes are nonpareil when it come to colorful clothes.

THE ECONOMY OF WOOL. A woolen garment gives return value for the money expended. It is not made for merely one season's wear. If cared for well, woolens and worsteds last for years.

THE CRISPNESS OF WOOL. The crispness of, say, an accordion pleated wool crepe skirt is without peer for the sheer beauty that derives from freshness, drape and fit.

THE EASE OF PRESSING WOOL. Simple pressing of woolens and worsteds never fails to bring back the smartness of a garment after rugged wear.

THE FEMININITY OF WOOL. What is more appealing to the eye, and more truly emphasizes the feminine look, than a tailored worsted or woolen suiting?

THE FINE HAND OF WOOL. No fabric can match the fine, soft, appealing hand, feel or surface effect of top-flight woolens, worsteds and hair or specialty fiber materials, alone or in blends of these fibers. A Linton tweed, a vicuna coating, a soft challis, a fine broadcloth or a Poiret twill all excel in hand.

THE INSULATION OF WOOL. Because of its natural powers of insulation, aided by the proper weight fabric, woolens and worsteds are truly year-round materials. A heavy melton and a California weight worsted are equally a must.

THE LIGHTNESS OF WOOL. Sheer lightweight woolens and worsteds made in a variety of appealing constructions have made their mark in the world of fashion for men, women and children.

THE SMOOTHNESS OF WOOL. So many people like smooth feeling woolen fabrics . . . gabardines, sheen gabardines and other dress goods noted for their absolute smoothness.

THE STURDINESS OF WOOL. For rugged, sturdy wear, call to mind the durability of a worsted men's wear suiting, a cassimere or a serge, and the types like melton, kersey, beaver and broadcloth. They are all neat materials . . . always worn in the best of circles, fresh in color, appearance and fit.

THE TAILORING QUALITIES OF WOOL. There are woolen or worsted fabrics that provide the utmost in tailoring for the wearer. Soft feeling coverts, Tivoli venetians, suedes, flannels and Saxonies have appealing hand or feel in tailored garments; they also drape well, do not shine with wear. They hold to the proper style lines in either men's or women's wear.

PROPERTIES AND CHARACTERISTICS WHICH MAKE WOOL EMINENTLY WEARABLE

Woolens have a natural pliability, a property that Wool is naturally water-repellent and it does not is most important to the wearer. The woolen gar-ment moves along with the movements of the body even in a wet bathing suit.

Woolens and worsteds lend themselves to shaping and tailoring exceedingly well. These two characteristics teristics make the materials the favorite in the men's wear field.

Woolen fabrics can be made in any weight within reason. The most satisfactory summer fabrics ever made for use in the high heat and high humidity of New York were the well-known wool tissue dress fabrics. At the same time, no claim can be made that any fabric is more comfortable in the coldest weather than a woolen cloth.

Wool can be woven into an infinite number of constructions as well as made in a great variety of motifs and designs in knit goods.

Woolen fabrics drape very well. They do not have that stiff or artificial look. In cutting and finishing, woolens behave ideally; there is no puckering of seams, no difficulty with hems and double thicknesses.

have to be chemically treated for this purpose.

Statistics show that ninety percent of men's and women's outer coatings are made of wool, even though other fibers are promoted in the industry.

Woolens are non-thermoplastic; that is, there is no danger of their melting or heat-shrinking during ironing and pressing. Any woman consumer of woolens, of course, is aware of this fact.

It has a natural resilience second to none. Proper hanging is all that is necessary to keep a wool garment in shape for long periods of wear.

Wool is naturally flame-resistant. A lighted match dropped on woolen fabric will burn a hole in the material, but the flame soon sputters out; the flame will not spread even if the cloth is napped. No special chemical treatments are needed to make wool flame-resistant.

Wool is porous and thus atlows air to circulate over the skin. It does not stick or adhere to the skin of the body.

Because of the natural crimp in wool, it does not have to be applied artificially, thereby saving on production costs.

Wool dyes easily and well in true, brilliant colors with dyes of long-standing reputation. No costly experiments are needed before dyeing wool.

Napping can be achieved without pulling on the fibers or affecting the fabric construction. Because of the natural scales or serrations in wool, the fibers tend to cohere well in the weave formation of the goods. The nap, when completed, is resilient and will not mat down and crush. No chemical treatment is necessary to cause wool nap to stand up under wear from body pressure.

Wool lends itself exceedingly well for blending with other fibers.

Woolen and worsted fabrics have a natural luster that is most difficult to simulate. This gives the luxurious appeal which other types of more or less comparable fabrics rarely possess.

No chemical treatments are necessary to make wool wrinkle-resistant.

A Glossary of

TEXTILE TESTING TERMS

With new fibers, fabrics, finishes and fashions constantly before us, in this day of amazing technological advance, textile materials more and more must be able to meet all types of tests and requirements corresponding to the variety of its end-uses. The fabric and what it will do is of paramount importance to every consumer.

No single fabric can meet, nor is it supposed to meet, all requirements or all tests. Since every fabric today has many purposes it must, however, dependent on its designated end-uses, be able to meet rigid requirements, to pass as salable merchandise. These tests which fabrics are given include the following, to name a few: abrasion; tensile strength; shrinkage; elasticity; elongation; resistance to moths, mildew, alkalies, acids; permeability; porosity; fastness to color fading and sunlight; washing; ironing.

The textile technologist and the textile technician are deeply interested in this phase of textiles, one that calls upon the chemist, the physicist, the designer, the weaver, the finisher; in short, every person who is connected directly or indirectly with turning out a piece of fabric that should

The following glossary presents a well-rounded dictionary of textile testing terms of current importance and usage. To the trained expert in textiles this glossary should prove of interest and, it is hoped, of help; to the student or layman, it reveals the great scope of the testing of textiles, a most important facet of the textile industry.

ABRASION WEAR TEST MACHINE: A testing machine which has two abrading units for testing two specimens at the same time for comparative purposes. Sample size is $4\frac{1}{2}$ inches wide and $6\frac{1}{2}$ inches long. One specimen is cut with the long direction parallel to the warp, while the second sam-ple is cut with the long direction parallel to the filling. Clamps hold the samples in place, one of which is stationary, while the other applies and maintains a tension of eight pounds in the direction of the length of the specimen, distributed evenly across its width. Minimum pressure be-tween the abradant (a #320 flexible aloxite cloth four inches wide or a piece of cloth of the same type as that being tested) and the testing specimen is 33 ounces. Heavier fabrics may use as much as 88 ounces maximum. Pressures may be increased by weights which come with the machine.

ABSORPTION GAUGE: An instrument by which the rate of absorbency of a textile fabric in both the warp and the filling directions may be determined. After partial submersion of specimens to be tested in water, colored with potassium bichromate, the speed of migration of the solution is recorded at specific intervals.

ABSORPTION TEST: A test which measures the resistance of the fibers or filaments of a fabric to absorption of water.

AIR-CONDITIONING OF FABRICS: Fabrics are made cooler by air-conditioning, by which porosity and permeability are increased in the fabric construction. Fuzzy, protruding fibers are removed without impairing the tensile strength of the cloth. Perspiration evaporates quicker than usual and the humidity of the body is therefore lowered.

AIR PERMEABILITY: A comparative test in the testing of textiles which shows the amount of air which will pass through materials. The test will show the openness or porosity of fabrics by mea-suring the air flowing through under standard test measurement on especially made machines.

A.S.T.M. (AMERICAN SOCIETY FOR TESTING MATE-RIALS): This organization, national in scope, sets up standards for textiles and other merchandise. The A.S.T.M. Committee D-13 on textile materials covers specifications, tolerances, methods of testing, definitions and terms. A.S.T.M., 1916 Race St., Philadelphia 3, Pa., issues an annual publication each October.

AXLINE TESTER: An apparatus used to test elastic fabrics. It is designed to stretch repeatedly an elastic fabric to its extreme elongation, and at that point allow a weight to act on the specimen to give it additional stretching force, the amount of which can be varied to suit the material under test. The action closely simulates the conditions to which a foundation garment is subjected in ordi-

BOIL-OFF: The percentage of water-soluble material found in nylon, rayon and silk yarn in terms of a percentage loss in the boiling-off when the yarn is treated in accordance with certain standardized tests.

BONE DRY: Term meaning that all moisture has been removed from the sample by heating to a constant weight in an oven set at 220-230°F.

BURSTING STRENGTH: A test, usually made on knitted fabrics, to determine the resistance of the material to an applied bursting pressure. The pressure is applied in one type of tester by a rubber diaphragm and in another by a metal ball.

Wash Formula for predetermining shrinkage of washable cotton and him fabrics in accordance with Federal Specification CCC-T-191a Wash Test

Samples: 20 inches by full width of cloth.

Mark off three 18-inch measurements, in both warp and filling directions.

Equipment and Materials:

Small Reverse Wheel, cylindrical (twenty-inch

Use a standard load — three pounds dry samples. Water to be fifty times the weight of the goods Soap — good grade laundry soap to give running suds. (Add additional pieces of cloth to sam-ples if necessary to make standard load).

Cloth should be well covered by water.

- Place samples in wheel and start wheel.
- Turn on water and steam.
- Run water in to proper level add soap.
- Turn off steam when water boils approxi-
- Run wheel forty minutes from the time started.
- Draw off water. Do not stop wheel. Fill wheel to proper level with water — bringing temperature to 140° F.
- Run for five minutes.
- Draw off water.
- Fill to proper level bring temperature to 140° F. Run ten minutes.
- Drain off water while the wheel is running and run five minutes without water. Total time is sixty minutes, wheel running continuously.
- Remove samples from wheel squeeze, do not wring. Spread out and dry on screen or ventilated surface.
- m. Dampen with spray dampener allow samples to condition for five minutes.
- n. Press on press machine or by hand iron by raising and lowering iron do not slide

- Information Regarding Wash Wheel:
 a. Speed of wheel (when not running in one direction) about 35 r.p.m.
- Reversals of direction of rotation every eight or nine minutes.
- c. Keep belts tight in order to prevent slippage.

dv

Textile Testing Terms ... continued

d. Water, steam and drainage connections should be so arranged that the wheel can run continuously during the test.

CARPET WEAR TESTER: When in operation, the carpet testing machine submits a circular sample of material to a wearing action through the use of leather abrasive surfaces. The leather surfaces are mounted on a set of wheels, one driving wheel and one braking wheel. During the test the wheels produce a circular track on the face of the specimen and set up a wearing action through pressure and friction which duplicates normal wear over a period of time. The loss of thickness produced by the action determines the results obtained by the test.

CLOTH THICKNESS, MEASUREMENT OF: The General Electric Company, New York Division, has developed an instrument that will measure cloth thickness by means of radioactivity.

The material is bombarded with beta rays (electrons). The number of beta rays that pass through the material is measured, and from this it can be determined how much the material varies from the desired thickness. The instrument, similar to the one used to measure cosmic rays, radiates beta rays by radiation from a pin-head size grain of strontium 90, a radioactive isotope.

COLORFAST: Materials are tested for sufficient color retention so that there will be no noticeable change in the color or shade for the normal life of the garment. No fabric is completely colorfast. When purchasing fabrics make sure that they are fast to the particular color hazard to which they will be exposed. It is, for example, more important that a shirting be fast to washing than to sunlight; drapery fabrics should be fast to sunlight; infants' wear should be fast to perspiration and other acidic compounds.

COLORFASTNESS TO PERSPIRATION: For tests of this nature see page 100, Tentative Test Methods, 15-49, 1950 Technical Manual of the Yearbook of the American Association of Textile Chemists and Colorists, volume XXVI.

COMPRESSIBILITY: The ease in squeezing a fabric; this may be soft or hard, high or low.

CONDITIONING: Determination of the true or basic weight of fibers or fabrics by the standard percentages allowed with regard to moisture content. The term also implies the restoration of moisture lost during manipulation or manufacture to fibers and fabrics.

CROCK: The etymology of this term is not definitely known. It implies the undesirable property of a dyed fabric by which the coloring matter rubs off the material and smears, smudges or soils other materials with which it comes in contact. This blemish is usually traceable to improper dyeing, either in the method or procedure used or in the unadaptability of the dyestuff.

CROCK-METER: An apparatus designed to measure, under standard test and procedure, the degree of color fastness to the crocking of dyed fabrics. The device measures the resistance of a colored surface to rubbing or stroking against an uncolored surface. The instrument may be used under both wet and dry conditions.

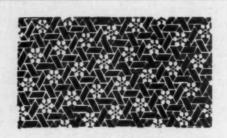
DENSITY: With regard to the hand or handle of a textile fabric, the weight per unit volume based upon the ASTM standard measurement of thickness and fabric weight. Density of a fabric is classed as high or compact as against low or open.

DETERGENT: A substance which possesses cleansing or purging properties. Soap and antiseptic,

for example, are used to rid yarns and fabrics of dirt and soil.

pimensional restorability: The ability of a fabric to return to its original dimensions. A percentage figure specifies the dimensional change as found by laboratory testing. Many fabrics will shrink or stretch after cleaning or laundering. However, rayon fabrics which have been properly constructed and finished will return to their original dimensions by ordinary ironing.

A two percent dimensional restorability means that while a fabric may shrink more than this in washing, it is restored to within this percentage of its original dimensions by ordinary home methods of pressing.



DRY CLEANING CYLINDER: A laboratory machine which consists of a motor-driven tumbler fitted with a water-tight cover. The rotation of the tumbler will supply the necessary agitation which, together with the use of the proper testing solvents, can determine a fabric's resistance to shrinkage and its color fastness under dry cleaning.

DUCTILITY: A permanent increase in the length of a yarn when elongated beyond the elastic limit. Rayon filament yarn has a higher ductility than natural fibers.

DUST-RESISTANT: Many compact-texture materials, because of pick count or finish, seem to be impervious to particles of dust. Cloths classed as dust-resistant must be well tested before the term is applied to them.

ELASTICITY: The property of a filament or yarn to elongate upon application of tension, and to be restored to the original length upon the release of tension.

ELONGATION: Deformation caused by a tensile force. This is expressed in terms of the original length.

EXTENSIBILITY: The degree to which a fabric may be stretched. It refers to high or easy stretchability as against low or non-stretchable textiles.

FABRIC ABRASION MACHINE: Various types of design and operation are found in fabric abrasion machines. Some use a uniform rectilinear motion; others use variable rectilinear motion. In some instances, it is uniform rotary motion, while in other cases the motion is of the variable oscillating type.

Materials used as abradants will also vary, depending on the local conditions. The results of the test are based on such factors as visual inspection, loss of thickness, loss of weight, increase in porosity to air and change in the reflecting power or luster.

FABRIC FLAMMABILITY: Applied to combustible cloth, which after ignition continues to burn at average or rapid rate. A slow burning fabric, also known as one of low combustibility, is one which will burn or glow at a slow rate.

Fire-retardant or fire-resistant fabric is one which, after the removal of the source of ignition,

continues to burn either by flame or glow only in the area where the direct ignition was applied. Incombustible or noncombustible fabric is one that will not ignite or give off vapors that will ignite when ignition is applied.

FABRIC RESILIENCY: The ease with which a fabric returns to normal from deformation, in which the rate of recovery is limitless and thereby includes elasticity which may be referred to as instant recovery. The fabric hand may be high or springy, or low or limp. Resilience may be compressional, extensional, flexural or torsional.

FABRIC SHIFT TESTER: An instrument used to measure the resistance in a fabric to the shifting of yarns. The specimen to be tested is mounted under specific tension in a set of clamps and is then stroked by a set of rubber friction jaws. The pressure on the jaws is adjustable. The degree of distortion which occurs in the yarns of the material determines the serviceability of the fabric.

FADE-O-METER: A machine used to determine the fastness or fugitiveness of colors. It does in a few hours what would take a week to do in the elements in testing for the desirability of the color. Forty hours' treatment will give results that would take many days in the sun. The sample to be tested is exposed to the light in the Fade-O-Meter, which is regulated to correspond to natural rays. Results are checked as to fastness, fairly fast to light, and not fast to light.

FASTNESS: The resistance of dyes to color-destroying agents, such as light, washing, perspiration, salt water, etc.

FILAMENT COUNT: The number of individual fibers or filaments actually counted in silk or manmade fibers or filaments. The number of filaments has direct influence on the softness, strength, pliability, hand and finish of the fabric.

FIRE-RETARDANT: Fabrics which have been specially treated with special agents to make them resistant or retardant to fire. There is a wide range of fire-retardants on the market today.

FIRE-RETARDANT FINISH: There are several methods of rendering cottons fire retardant today. Two of these follow:
First Method:

- 5 ounces carbonate of ammonium
- 16 ounces of common alum
- 3 ounces boracic acid
- 3½ pounds borax
- 6 pints of water will make up the solution.

Second Method:

- 8 ounces ammonium phosphate
- 1 ounce boracic acid
- $4\frac{1}{2}$ pints of water will make up the solution.

With either method, the cloth is soaked in the liquor used. These formulae may be increased preportionately to the amount required to take care of all the cloth to be immersed. Proper soaking is vitally important. If the goods are washed and laundered, the operation must be repeated.

Much fabric is now treated to make it fire-

Much fabric is now treated to make it fire retardant by means of a spray attached to a chemical container.

FLAMMABILITY TESTER: An apparatus approved by the American Association of Textile Chemists and Colorists for the evaluation of textile materials with regard to flammability characteristics by measuring the rate of burning. Under standard test procedure the results can be interpreted as to whether or not a fabric is flammable.

FLAT BED PRESS: An ironing or pressing device used in making shrinkage tests on textile fabrics. It is so designed that it will eliminate, as much as possible any distortion of the fabric such as might occur during the pressing of material with an or-dinary flat iron. The device is supplemented with a perforated steel plate upon which the specimen to be tested for shrinkage is placed for pressing.

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FLEXIBILITY: The ease with which a material is bent. This may be pliable or high, stiff or low.

FLEXING MACHINE: A machine used to determine the flexing qualities of upper leathers for use in shoes, artificial leathers and comparable materials. Equipped with templates for cutting out test specimens; also adjustable for the thickness of the sample to be tested.

FRAZIER TESTER: A hosiery testing machine used to measure distensibility, recoverability and stretch-endurability of women's hosiery. This apparatus provides a means for the measurement of behavior of a stocking when the upper part of the leg of the stocking is repeatedly distended in a way which subjects it to forces similar to those which occur at the knee and the garter clasps of a stocking in use. It records on a chart the relationship between the load and the circumference for each cycle of loading and unloading, and the number of cycles on a counter.

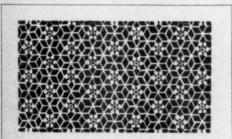
FUME FADING: Some man-made materials, especially red, violet, blue or green dyed cellulosederivative acetates will react to gas fumes in the air by turning a reddish hue or shade. Found more in industrial areas where these fumes seem to prevail. May be counteracted by special resistant dyes and chemical compounds, and by frequent airings of the clothes closet. Incorrectly called, at times, gas fading.

rusion Point: The temperature at which a solid will become fluid.

HOSIERY ABRASION MACHINE: An apparatus used to determine the relative resistance of hosiery to the frictional wear of shoes. It may be used on samples in the dry condition or in the moist state.

HYDROSCOPIC OR MOISTURE-RETAINING PROP-ERTY: The ability of a fiber to retain moisture; sed by all fibers but with varying degrees. Wool retains moisture content to a higher degree than other fibers because of its nature. This fact accounts for the added weight of untreated overcoats and felt hats worn in damp or rainy weather.

HYDROSTATIC TEST: Usually refers to testing, under pressure, water repellent properties.



IMMERSION TESTING: Refers to testing by submerging the fabric in water or some other liquid.

KNIT FABRIC SHRINKAGE GAUGE: A pneumatic means employed to measure restorability of knit-ted fabrics. The apparatus consists of an inflatable diaphragm in which there is set a circle of sample mounting pins. An air pressure and measuring system, and an automatic trigger gauge to release the air pressure when a predetermined sample dimension has been reached are also features of the machine. The object of the instrument is to evaluate materials from the standpoint of restorability as normally encountered in end-uses.

LAMINATE: To beat, roll or press into thin sheets or strips such as metals or plastics.

LAUNDRY-PROOF: Laboratory-tested fabrics and garments which will withstand laundering without the loss of color or shrinking under ordinary washing conditions in a given length of time. The term can be applied only to materials so tested.

LAUNDRY-TESTED AND APPROVED SEAL: A seal awarded by the American Institute of Laundering to guide the buying public in the purchase of washable merchandise that has all the characteristics of launderability — color fastness to gas, perspiration, sun and washing; tensile strength; dimensional stability; satisfactory construction.

MICROSCOPICAL DETERMINATION: By the use of the microscope many determinations may be made in connection with fibers, fabrics and finishes; for example, the grades and the qualities of fibers, amount of fiber content in a mixed fabric, degree of mercerization in cotton goods, construction of

MILDEW-RESISTANT: As the term implies, it is the treatment of textiles to cause them to be impervious to mildew and mold. There are several factors to be considered in laboratory testing prior to the use of the term. For example, a textile plant survey conducted by Givaudan-Delawanna Company revealed these factors concerning mildew-resistant finishes: durability, flexibility, heat and light resistance, non-corrosiveness, non-toxic properties, permanency, water resistance, weather resistance. A majority of mills reporting in the survey preferred chlorinated phenols, followed by mercurials and metallic soaps in treating textiles for this

MOISTURE CONTENT: The amount of moisture found in a textile cloth expressed as a percentage of the original weight as determined by testing.

MOISTURE EQUILIBRIUM: The condition reached by a sample of textile material when it no longer will absorb or take up moisture from or give up moisture to the surrounding atmosphere

MOISTURE-FREE WEIGHT: Fabric weight after it has been dried to a constant weight by an approved procedure. Can also imply the bone-dry weight.

MOISTURE REGAIN:

- 1. Standard moisture régain is an arbitrary fig-ure to which basis the strength is to be cor-
- Actual moisture regain is the amount of moisture, figured as a percentage of the dry weight, which the material contains at the time of rupture.
- 3. Rate is the percentage of increase or decrease in the breaking strength of the material per one per cent change in moisture regain between definitely prescribed limits.

MOTH-REPELLENCY: Treatment of woolens and worsteds to make them resist attacks by moths. Various procedures differ in their resistance to laundering and dry cleaning.

OSMOMETER: A scientific instrument to determine the strength of odors in numerical values. Measurements are based on the air-dilution principle by diluting and mixing quantities of odor-free air and odorous air in various concentrations with the dilution being performed under pressure.

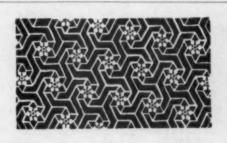
PERMEABILITY: The ability of air, gas, water, etc., to pass or flow through the interstices or openings among the threads or yarns used to make a fabric. See Air Permeability.

PERSPIRATION-RESISTANT: Said of fabrics or garments that resist acid or alkaline perspiration. Laboratory test results should be consulted prior to selling any fabric as perspiration-resistant.

PHOTOMICROGRAPH: Attaching a camera to a microscope enlarges the specimen or photograph so that it may be more easily seen by the observer.

PLASTICIZER: A particular substance added to plastics in order to reduce brittleness and to increase flexibility and ease of molding.

POROSITY: Fabrics which have open spaces in the texture to admit air to pass through or allow the heat given off by the body to escape. Summer fabrics that are known as air-conditioned have found much favor with the public since certain chemical processes remove fuzz or protruding fiber from the goods, thereby allowing the material to become more or less porous.



PRECISION TWIST TESTER: Either hand- or motordriven, this machine determines the twist and the twist take-up of yarns which must have high twist, such as crepes and comparable constructions.

REGAIN: A definite percentage of moisture added to the bone dry weight of the material being treated. Under normal conditions the amount of regain for the various cloths are: cotton, 6 per cent; woolen, 16 per cent; worsted, 10 per cent; silk, 11 per cent.

RELAXATION SHRINKAGE: The loss of area which occurs when the tension or stretch is imparted to woven or knitted fabrics during finishing, or to wool fibers or yarns during spinning or knitting. The shrinkage is lost by a lessening of the strain comparable with that of a fabric or garment during laundering.

RESIDUAL SHRINKAGE: The shrinkage or shrinking properties that remain in goods after they have undergone a shrinking process to bring about maximum shrinkage. Since many factors, however, are involved . . . method of shrinking, increased shrinking brought about by additional washing, sponging, pressing, and dimensional changes resulting from different methods of handling dling... the term residual shrinkage has come to mean the actual dimensional change which occurs after the fabric has been subjected to a standard test procedure.

RESILIENCY: The power of rebounding possessed by many textile materials, a decided asset in fabrics. The term resiliency is often used with regard to the elasticity in the warp and the filling of a cloth, chiefly made with hard-twisted yarns.

SALT SPRAY TEST CABINET: Testing equipment designed to determine the corrosion-resistance quali-ties of electroplated or coated material, alloys, metal parts, lacquered or painted samples, etc. Tests are performed with accurate control of air heaters and atomized, heated salt water within the testing chamber. Salt spray testing is the standard by which rust-resistance is measured.

SEAM SLIPPAGE: Determination whether or not a fabric will hold a seam against pulling or opening. Standard tests have been established for seam slippage which, in all cases, assures that the fabric in question will have at least a ten-pound resistance to slippage.

(continued)

BURNING TESTS FOR IDENTIFICATION OF MAJOR FIBERS

Fiber	Burn-Flame	Odor	Residue
COTTON — Vegetable	Luminous, rapid, yellow glow	Burning paper, pungent or choking	Small, fine, gray, extremely light in weight
LINEN — Vegetable	Same as cotton but does not burn as rapidly	Compares with cotton	Compares with cotton
WOOL Animal	Sputters, slowly, may expire	Burning feathers or burning hair	Brittle, shiny, hollow bead
worsted — Animal	Like wool, but burns more slowly	Same as wool	Same as wool
SILK (TRUE) — Animal	Slow; yellowish globules formed	Burning animal matter	Brittle bead, easily crushed
SILK (WEIGHTED) — Animal	No flame; blackens like smoke	Burning animal matter not as sharp as silk	Skeleton of charred fabric or yarn
VISCOSE — Man-made	Like cotton — very rapid burn- ing	Compares with cotton	Compares with cotton
CUPRAMMONIUM — Man-made	Like viscose	Like viscose	Compares with viscose
ACETATE — Man-made	Rapid, with small sparks; melts or gives drippings	Burning paper and acidic odor	Hard, dark bead, most difficult to crush
ACRILAN — Acrylic copolymer	About like wool, supports com- bustion and melts	Very little, rather indistinguishable; black smoke	Black which is both gummy and brittle
DACRON — Polyester type — synthetic	Burns slowly; does not flash in burning; melts	Very black smoke given off	Hard, black mass, formerly molten
DYNEL — Staple fiber from copolymer of acrylonitrile and vinyl chloride	Does not support combustion, melts	Very sharp acid or acrid odor	May have some unburned fiber; balance usually black, tough leathery-type mass
FIBERGLAS — From glass marbles	Does not burn		
NYLON — Coal, air, water	No flame; melts and gives off drippings	Celery-like	Very hard, dark bead
ORLON — Polyacrylonitrile	Compares with wool, supports combustion, melts	Very little odor; some black smoke	Hard, on the order of charcoa
VINYON — From vinyl resin	No flame; melts	Paraffin-like	Hard, dark bead

Textile Testing Terms . . . continued

SERIGRAPH: A device to test for strength or tenacity, stretch or elongation, and the elastic or yield point. The test is done by the reeling of the proper length skein, weighing it for size, and then breaking the 100 to 400 parallel ends, depending on the size of the yarn.

Elasticity and tenacity are computed in grams per denier. Strength and elongation of cotton and wool yarns are made in accordance with the standards set up by the American Society for Testing Materials, Philadelphia, Pennsylvania. Twist tests should be made in accordance with the standard procedure of the United States Testing Company, Hoboken, N. J. Power driven twist counters give the best result when testing for twist.

SERIMETER: This machine tests raw silk yarn for strength, tenacity, elongation and yield.

SERIPLANE: This is a test to determine the grade of raw silk. The silk to be tested is uniformly mounted in panels on a special type of inspection board. Trained inspectors rate the panels in comparison with standard photographs as follows:

- Evenness . . . for the variations in diameter of the yarn.
- 2. Cleanness . . . for the number of imperfections present.
- 3. Neatness . . . for the content of loops, nibs and hairiness.

The inspection is conducted in an area lighted according to a specific standard.

This effective test may be used for as many as forty panels of silk. As the length of each panel is forty meters in the standard size of a 13/15 denier silk, the total length of silk used would be only 1600 meters. This, when compared to an entire lot of silk that would run about four hundred million meters, is too small to represent the lot, but does give some idea as to the quality.

SHOWER-REPELLENCY: Also called splash-resistance, the term implies fabric which is resistant to light rains or showers. The treatment is such that washing or dry cleaning will gradually remove the finish coating, diminishing its effectiveness.

SHRINKAGE: When fabrics are shrunk there is a loss in length, width, area, weight, etc. Textile testing is done to assure residual results that will be satisfactory to the buyer of the material in question. The loss in wool-scouring is when yolk, suint, and other foreign matter are removed from the actual wool fibers in the piece. Fully scoured wool is called the yield, scoured state or the clean basis. The greater the loss in weight and volume, the higher the quality of the wool.

Woolens and worsteds are pre-shrunk before they are sent to the cutting-up house. This is done with steam or cold water. SILK INSPECTION AND TESTING: To determine the size or count of silk, its weight in a 450-meter length is considered as a standard to use. Harada's Denier-graph is employed to determine the size, and at the same time this machine records the evenness of the silk. Strength and elongation are measured by the serimeter and serigraph, at the same time; Tanahashi's Evenness-graph records strength and evenness. Cleanness is tested by the seriplane, gauge machine or drum. Cohesion is determined by the cohesion machine.

Exporters' inspections are made in their own laboratories, following an optical inspection by experts. Close inspection is necessary to insure uniformity of color and luster in all skeins in the book, as well as in all books in the bale. Following this, tests are made of random skeins which are put on a frame to wind the spools.

Silk is wound at the rate of about 50 times a minute. The number of breaks in two hours' time is recorded. Most breakages in silk are due to fine ends, one of the great defects in silk. These breaks give a negative appearance to finished cloth. Efficiency is also impaired by them.

In making any of the above tests, the silk is wound onto spools for quick handling. While testing machines determine the exact value of the sample silk, decisions on an entire lot could not be based on these findings. The only test for the uni-

formity of silk in an entire lot is the optical test. It may be said that even the results from mechanical and optical tests and inspections are not sufficient to judge the grade of the goods.

SIZING SKEIN WINDER: A winder capable of winding ten sizing skeins simultaneously for testing purposes. The machine can be set for 400 turns of the reel (450 meters) or for 200 turns (225 meters). The reel measures 1½ meters, but reels are also on the market which measure 36 or 54 inches in circumference and are used for measuring woolen, worsted or cotton sizing skeins.

SLIPPAGE: The tendency which fibers, filaments, yarn, thread or cloth have to slip or slide when manipulated. Man-made cloths sometimes cause much trouble by slippage, particularly when being cut. Within the last few years certain chemical treatments have been given to cloth to prevent or to cut down the amount of slippage.

SNAG-RESISTANCE: Applied to hosiery, it is "the ability of a hosiery fabric, held under a predetermined and uniform tension, to resist a downward penetration and pull of an adjustable snagging needle. The test results are expressed as the snag-ging factor." (United States Testing Company, Inc., Hoboken, N. J.).

SNAG TESTER: An instrument which measures snag resistance of hosiery by applying pressure on an adjustable snagging point kept in constant contact with the hosiery fabric being tested. The pressure of the snagging point is gradually increased for each revolution of the snag tested until the actual snagging is detected. The greater the pressure required to produce a snag, the more snag-resistant will be the hosiery tested.

SPECTROPHOTOMETER: A scientific instrument for the measurement of color of reflecting materials, such as paint or paper, or of transmitting materials such as glass, filters or solutions. The instrument is useful for controlling the color of dyes, glass and inks since it is independent of psychological and philosophical factors which influence human vision. With this equipment it is possible to plot a curve of the light reflected or transmitted by a sample against the wave length of light.

STANDARD WEIGHT: The absolute dry weight of a textile plus the standard regain.

STANDARD YARN CONDITION: Attained by yarn when it is in moisture equilibrium with a standard atmosphere.

SURFACE CONTOUR: The divergence of a fabric from planeness which may be high or rough as against low or smooth . . . a matelassé compared

SURFACE FRICTION: The resistance of a fabric to slip because of its surface; designated as high or rough as against low or slippery . . . a satin compared with a cassimere worsted.

TENSILE STRENGTH: The maximum load per unit of the original cross-section area obtained prior to rupture. It is the actual number of pound resistance that a fabric will give to a breaking ma-chine before the material is broken on the testing apparatus and may no longer be classed as a cloth fabric. Bursting strengths are recorded on a dial set on the machine. Tensile strength is one of the most important requisites of cloth.

TENSION PRESSER: An apparatus used to measure the dimensional restorability of woven fabrics after laundering or cleaning. Fixed tension (determined by the type of fabric being tested) is applied to the warp and the filling of the damp sample under test. This procedure eliminates va-riations of ordinary hand pressing. Drying is ac-complished by the use of a perforated aluminum plate laid on the test specimen and then heated with an electric iron.

TENSOMETER: An instrument designed to measure the tenacity by determining the tensile strength necessary to break the specimen or sample.

TEXTILE TESTING: This essential phase of the textile industry, which is stressed and given prominence by mills and department stores, has come to the fore very rapidly within the last few years. Some of the more popular tests given to materials are as follows:

Raw Material Tests

- 1. Microscopic test for fiber content.
- 2. Burning test for identification of content and fiber.
- 3. Chemical test, acid and alkali, for fiber content.
- 4. Testing for union and mixed fabrics.

Construction and Weave

- Weight per yard of the cloth.

 Determination of the warp and filling.

 Determination of the face and back of the goods. Reed marks.
- Texture or count of the material, the ends and
- picks per inch.
 Twist in the yarn by means of the twist counter.
- Size of the yarn as to ply, evenness, and yarn number or count.
- Determination of crimp in the yarn.
- 9. Strength of the yarn when wet.
 10. Resistance of the material to wearing abrasion.

ACKNOWLEDGMENTS

The Editors of AMERICAN FABRICS make grateful acknowledgment to James L. Giblin, Associate Professor at the New Bedford Textile Institute, and to Staff Members of the United States Testing Co., Hoboken, N. J. for their valuable aid in compiling and checking this glossary of testing terms.

- 11. Tensile strength of the yarn by the single strand method.
- 12. Breaking strength of the cloth, strip or grab

Color -

Fastness of color to sunlight, perspiration, washing, crocking, bleeding, spotting, sea water, and bleaching.

Finish -

- 1. Wearing quality determined on the wearometer.
- 2. Abrasion test for nap on the cloth.
- Determination for waterproofing, repelling water and fireproofing.
- 4. Determination of sizing, filling and finishing material.
- 5. Testing for weighted silk.

THERMAL CHARACTER: The apparent difference in the temperature of the cloth and the skin of the person handling the goods. Materials may be spoken of as being high or cool to the touch as contrasted with low or warm.

THERMAL CONDUCTIVITY: Comparative warmth of textile materials is measured on a special apparatus which records the resistance of the goods to the flow of heat. The lower the thermal conductivity, the greater the warmth of the goods.

TITRE: French term, concerning deniers, used to determine the size and number of yards per pound in filament yarn such as silk, rayon, acetate, nylon, vinyon, etc. Example is a 14/16 denier silk with a mean of 15, the number between 14 and 16.

TWADDLE HYDROMETER: Used to measure the density of liquids in degrees; the strength of the mercerization bath is measured by this hy-

TWIST COUNTER: An instrument which determines the amount of turns of twist per inch in all types of yarns. It is also used to find the amount of take-up in yarns due to twist. The sample to be is inserted between two clamps, one of which is stationary while the other is free to be revolved in order to remove the twist from the yarn. The distance between the clamps is adjustable and can be set according to standard test requirements. The tension on the specimen, as well, is adjustable. Equipped with a device for recording the amount of twist in yarn.

WARMTH TESTER: A testing apparatus which scientifically gauges the warmth of fabrics in use under varying climatic conditions. By simulating practically all weather conditions, this laboratory instrument tests all textile fabrics under conditions normally encountered in actual use. The effect of a particular weave, weight of cloth, type of fiber, length of nap and type of finish on the thermal properties of a material can be measured by this valuable machine.

WASH-FASTNESS TESTER: A washing machine which determines colorfastness of all types of fabrics to dry cleaning and washing, and for determination of shrinkage on small samples. The machine has a four-sample capacity.

WATERPROOFING: There are several methods used to coat a fabric so that it will be waterproof. Lacquer, oil or rubber compounds are often used. The use for which the fabric is intended determines whether it shall be waterproofed, water-repellentprocessed, etc. Waterproofing closes the pores of the goods. Water-repellent finishes do not close the pores of the goods against air; hence, they are more comfortable to the wearer since the body can breathe through them.

WATER-REPELLENCY: The ability of a fabric to repel water. Various types of tests are used and ese are conducted on the samples before and after subjection to standard washing and dry cleaning tests. Immersion, spray, spot and hydrostatic methods may be used. Shower-resistant, rain-resistant and waterproof factors are interpreted from the results of the testing.

WATER-RESISTANT: Fabric of this type repels water for a limited time. Paraffin or wax methods are often used to make the material water-resistant. The aluminum stearate method is also used to provide this property to fabrics.

X-RAY TESTER: A heavy duty, stationary X-ray unit which will make accurate radiographic (Xray) penetration through twelve-inch solid aluminum, 31/4-inch solid steel, and two-inch solid

Materials of practically any thickness can be penetrated by using gamma ray. This equipment can also be adapted to plastics, ceramics, electric cable tests and vacuum tube examination.

YARN ABRADER: A machine designed to measure the resistance to inter-specimen rubbing of multiple samples of yarn. Such factors as fiber blends, resin treatments, sizing, twist and filament count have definite influences on the resistance of yarn to abrasive action.

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ILONKA KARASZ received her early art education at the Budapest School of Arts and Crafts in Hungary. Since then she has earned wide recognition in all fields of the graphic arts and for her easel painting. A New Yorker Magazine cover artist since its founding, one of her covers is owned by the Metropolitan Museum of Art. She has also designed for numerous other magazines, including the old Vanity Fair. And a portfolio of her wall paper designs was recently published in American Fabrics.

Miss Karasz believes that design for decoration should always be two-dimensional as opposed to the third dimensional quality she adds to her easel painting. She finds her structure in nature and considers the knowledge of nature a prime requisite to the creation of fine art.

"It is the duty of the textile industry to provide the apparel manufacturing industry with enough new ideas to balance the standardization of the line production system . . ."

AMERICAN FABRICS Issue No. 1, 1946.

M. LOWENSTEIN & SONS' APPLICATION OF THE FINE ARTS IN APPAREL TEXTILES

Since the war era, textile designing by outstanding artists has constituted an important phase in the continuing vitality of the American textile scene.

At the Fifth Avenue galleries of Associated American Artists, one of the new creative projects of the textile industry was recently shown . . . a notable collection of fabric designs assembled by a group of fine arts painters allied with Reeves Lewenthal, who is responsible for the project.

Associated American Artists, a cooperative organization which includes many of America's best-known painters, has thus taken a fresh step forward in bringing fine arts into the lives and homes of millions of Americans. The course this group has pioneered evolved naturally through a series of stages, the most recent of which was fine drapery fabric designs and coordinated ceramics executed by its member artists and successfully promoted early this year.

A Fresh Approach

It is a significant collaboration in which Associated American Artists has now joined with M. Lowenstein and Sons. A group from among the distinguished members are designing, and Lowenstein is marketing, a group of cotton fabrics. The participating artists are all painters of wide repute whose works hang in public and private collections throughout the States. To textile design these

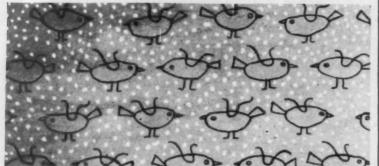
artists bring a completely new and fresh approach, a fine arts feeling and the inherent qualities of the easel painter's genius. The beauty of their designs is diverse and their use of color rich and varied. The style of each artist has been indelibly transferred to fabric. The artists whose designs are included in the initial presentation are Arnold Blanch, Doris Lee, Anton Refregier, Laura Jean Allen, John Hull, Richard Munsell, Thomas Vroman, William Ward Beecher, Ilonka Karasz, Louise Phillips, Mable Pickett, Brian Connelly, William Kasso. Exclusivity of the designs of these artists will be protected under the scheme by copyright.

Each Signed by Artist

Since each design carries the signature of the artist who created it, these vibrant new fabrics will be marketed under the name Signature Fabrics. They are for ready-to-wear in the better priced and quality lines . . . for women's and children's wear trades. Simultaneously with the fashion promotion, Lowenstein's plans to broaden the base of its original promotional activities into other segments of the ready-to-wear markets and the home furnishings field are now in various stages of progression.

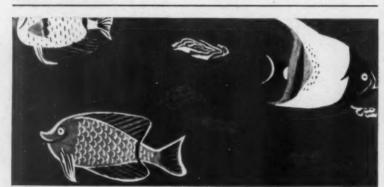
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M. Lowenstein . . . Fine Arts (continued)





MABLE PICKETT made her reputation on the West Coast in the San Francisco Museum of Art and the Rotunda Gallery where she had her first one man show. Her art education includes study at the Academy of Art in San Francisco and work in mural painting under Anton Refregier. She believes that an artist must always remain close to nature and represent nature in terms the on-looker can understand and share with the artist.





RICHARD MUNSELL was born in New York and studied at the Art Students League and the Phoenix Art Institute in Arizona. The purchase by the Museum of Modern Art of his "Posing for the First Time" is the most recent of many honors he has been receiving since 1935. These included three first prizes in one year, among them that of the Academy of Western Painters.





ARNOLD BLANCH, whose paintings hang in the leading museums and whose murals decorate several post offices, has become one of America's best known painter-teachers. He has taught at the California School of Fine Arts, the Art Students League, the Colorado Springs Fine Arts Center, Michigan State College, and is now teaching at the Art Students League Summer School, Woodstock.

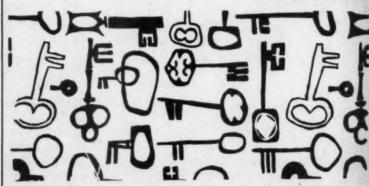
JOHN HULL is the only Montana artist of wide recognition who is not a cowboy artist. He has painted realistic still lifes and abstract moderns, and his mature style represents a pleasing melding of the two early approaches. Street vendors, subways, scenes of the night interest him most. His backgrounds are usually subtly variegated shadows with interesting highlights in orange tones.





ANTON REFRECIER is best known for his mural paintings, perhaps the most notable of these being the series of twenty-seven for the new Post Office in San Francisco, recently finished. In addition, his murals can be found in many buildings. He is represented by paintings in the permanent collections of the Museum of Modern Art, Metropolitan Museum, Walker Art Center.

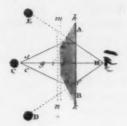




LOUISE PHILLIPS has a truly cosmopolitan art background. She left New York's School of Applied Design at the age of eighteen to study in Paris and London. She worked abroad until the war interrupted her painting for a short time. During the war she helped Englishmen evacuated by bombing find homes for their families and then went to the American Embassy with the Military Intelligence Corps.







FUNCTIONAL COLOR and LIGHTING for VISUAL EFFICIENCY and SAFETY

BY HOWARD KETCHAM

Prior to 1935, little had been done to apply functional color knowledge to everyday living. Today, seventeen years later, intensive research has made the influence of both color and lighting a major consideration in industrial planning and plant design. Equally valuable have been contributions to public and private transportation on the ground and in the air, and here, as in schools, in the home and in the factory a great deal remains to be done. In industry, results of intelligent use of color and lighting have been immediate and positive. Worker morale has improved and, with it, worker efficiency. Elimination of unintentional camouflage in color and of dimness or glare from faulty lighting has paid off in reduced nervous tension and eye-strain and in lowered accident-rates.

ALTHOUGH THE PSYCHOLOGICAL EFFECT of color is part of our everyday experience, only recent scientific research has systematized our knowledge of the subject so that we can, today, make full use of the complex impact which color has on us.

For most of us, yellow and red are gay and stimulating; black and grey have depressing associations. Some people find green vitalizing, like yellow or red. One manufacturer found green walls relaxing to workers who came to the cafeteria from white workrooms. Some people find peach appetizing and purple depressing, while others find that blue inspires confidence.

The help color gives to people in their work also makes them feel better. A radio tube manufacturer encountered a color problem on his production line. An important operation involved high precision spot-welding by women using machines with gas jets placed in a circle. This exacting work placed great strain on the eyes. Work benches painted sky-blue (psychologically cool) counteracted heat from the welding. Machines themselves were painted light orange for contrast with dark jets. Dark blue or black directly under the machines heightened the visibility of bright metal machine parts. Management reported the following:

The results are astounding. In a New England mill town where most of the employees are aware of nothing but drab, colorless mill interiors, the color alone was highly satisfying. The girls in all sections began to clamor for it; foremen became so enthusiastic they did a lot of repainting themselves. Again, some employees bought denim dusters in colors to match the machinery. The plant became markedly cleaner and, most important, shrinkage—that is, rejects, breakage, anything not passing inspection—showed an immediate and marked decrease. Rejects on one item had decreased two-thirds within the first week. Every cent expended on paint color has more than repaid that expense, in dollar return.

Not long ago, a color engineering project was completed at the Wire and Rope Division of the Jones and Laughlin Steel Corporation. Working time lost through accidents dropped thirty-eight percent in the first six months after the job was finished. Improved employee morale reduced absenteeism from about five percent to less than two percent. Labor turnover dropped from about four and one-half percent to less than 0.45%. Operator efficiency on complicated wire-twisting equipment climbed from eighty-five to ninety percent between 1945 when the color project

was started, and 1948 when it was completed.

Studies by the Better Vision Institute point up the toll on eyes taken by improper color and lighting. In the U. S., twenty-three percent of the people have defective eyesight at the age of fifteen; by fifty, the percentage has climbed to seventy-five; by sixty, ninety-five percent of the eyes are defective. One of three workers in the U. S. needs glasses. Fifty percent of office and textile workers, and seventy-five percent of garment workers have faulty vision. These increases are not due to advancing age alone. Such conditions point to the need for much more efficient use of color and lighting.

Artificial Lighting Standards

Because it can be rigidly standardized at all times of day, artificial lighting often promotes greater efficiency and safety than regular daylight. One example is the classification of cotton, where variations in light or incidental shadows tend to distort the classifier's judgment. In rooms with ceilings of natural celotex, walls painted to duplicate Munsell 8/neutral, and floors Munsell 7/neutral, artificial daylight of seventy foot candles gives best results. Fluorescent lamps in the ratio of three 40-watt daylight, to two 20-watt blue, to four 25-watt tungsten filament lamps make most satisfactory artificial daylight, though lamps from different manufacturers vary in color. (As a check, correlated color temperature of the combination should be about 7500 units.) Lamp units should be six feet above tables, at eight-foot center intervals.

Visibility depends on good illumination, but good illumination does not always mean more light. Lighting and color specialists work for glareless lighting and clear but restful contrasts. Good reflecting colors usually give greatest work efficiency and lowest light bills. White has a reflection value of 88%, cream 69%, ivory 67%, sky blue 65%, pale green 59%, buff 52%, grey, of the type used in many old-fashioned factories, only 50%. With the exception of yellow, colors will not reflect efficiently if too far removed from white. On the other hand, white itself soils easily, often lacks eye appeal, or creates excessive contrast. To avoid eye fatigue, colors directly in line with the workers' eyes should be of about the same brightness as the bench top or other working area. Soft shades such as light grey,

please turn the page)

Functional Color ... continued

pale green and light blue are restful, line-of-vision colors, light grey, especially, being practical as a dust-concealer as well.

In modern buildings and plants ceilings reflect the greatest volume of light. The Illuminating Engineering Society reports that in one large office-building a change from light buff to white ceilings (where white is effective) and the addition of cream-colored walls would have cut lighting costs about \$14,000 per year. The upper portion of very high walls may also be painted white for added reflectance. Very low ceilings can be raised visually by the use of a receding sky blue.

To the busy stenographer or bookkeeper a dark desk top means eye-strain through over-contrast with white paper. Light grey desk tops approximating Munsell 7.5/ value are more restful. On adding machines appropriately contrasting colored keyboards improve legibility. The situation could be further helped by a floor having a reflectance factor of at least twenty-five percent.

Eliminates Accidents

Distinctive colors pick out moving parts of machinery and center attention on them. Neutral grey backgrounds eliminate distraction from the field of vision. Again, better vision, more accuracy, less eye-strain, fewer accidents result from engineered color planning.

In one Brockton, Massachusetts plant shoemakers had worked at black machines, using black thread, stitching black shoes. Wall colors had been equally gloomy and dismal. Light green, blue, orange and cream brought more light to the work and its surroundings. Light-reflecting paint freshened and cleaned up workroom walls. Particular attention was given to background and to attention-color, like orange, for moving parts. Workers reported less eyestrain, relief from nervous fatigue, and absences declined. Best of all, the accident rate fell off sharply.

Anyone who has tried to thread a needle will appreciate why hosiery mill workers looping thread over a series of fine needles are distracted by strong light contrasts and by movement of neighboring workers. Grey-blue panels around the tables shut out confusion and provided a needed neutral background. A small pale grey mask behind a riveting-machine, pin-pointing the operator's attention and cutting out visual distraction, can save many fingers from damage due to faulty estimation of distance.

The spatial behavior of color makes camouflage possible. Reverse camouflage makes desired objects easier to see. Bands of safety yellow along the sides of aisles stop workers from drifting into dangerous traffic zones. Black and yellow striping warns of obstacles on floors or overhead. Again, spatially used, the appropriate green applied to walls in cramped spaces moves them back visually. This particular factor obviously has many applications to airliner cabins, cockpits, cabs of engines and other situations where a sense of space and air contributes to comfort and relaxation.

The ideas discussed here are not separable. When we shoot for one, we usually get the others. Good visibility, efficient lighting, colors which do not strain the eyes, spatial color functionally used... all these add up to harmony and beauty. Higher morale means better work, and conversely, what helps a man to do better work usually raises his morale. One thing is certain, dollars spent in improving color and lighting always mean greater safety and efficiency and pay off in less waste and larger output.

Color Interpretation as a Safety Factor

The most important fact about modern transportation is that it moves much faster than it used to and that, in times to come, we can expect it to move faster still. What moves faster hits harder. A crumpled fender at fifteen miles per hour means a

crumpled vehicle at sixty-five or seventy. Split-second decisions depend on seeing clearly and interpreting correctly every time. On the ground or in the air unintentional camouflage is deadly,

Color treatments, readily distinguishable at the greatest distance and in various lights, are the most desirable. Field tests of color vision show that orange is the most effective color, followed in order of decreasing effectiveness by yellow, green, red and blue. Orange and yellow as well as luminous white and aluminum are the most suitable for front and rear of commercial vehicles. Red and green are seen as shades of grey by about two percent of the population. Red has the further disadvantage of appearing progressively blacker under progressively dimming light. Light-dark contrast heightens visibility, focussing attention.

The illumination under which the color is to function is also important. Yellowish red (orange) is most visible in daylight. White and aluminum show up best at night under the usual automobile headlamps, as do most metallic-type finishes which act as semi-reflectors.

Choice of color depends on background quite as much as on qualities of the colors themselves. The green and yellow color scheme on Diesel locomotives of a Pacific Coast railroad lost themselves completely in California foliage. Silver and black, the next choice, would not show up against the Nevada desert. Black and orange finally removed the hazard.

The field grey which Long Island Railroad employees found refreshingly new and different from old type conventional train color, proved too perfect a match for the Long Island terrain, especially in time of low-lying mist, or at dusk. To warn motorists at grade crossings and to preclude other accidents, locomotive headlights were kept on through the day. The suggestion that orange be added to the front end of the locomotives increased visibility. A similar problem, presented by the New Jersey Central Railroad, was solved by an orange and blue color scheme. These two colors used together enhance each other, reinforcing their visual impact and making for higher long-range visibility.

Visibility and Proportion

In water transportation, vacillations of the weather and the constantly shifting colors on the surface of the water complicate the choice of color. Modern color engineering, in coping with these difficulties, also significantly improves shipboard morale.

This year, color plans for the Baltimore and Ohio Railroad's tugboats which ply the crowded harbors of New York and Baltimore were restyled. Their low-visibility black and maroon colors were changed to a high-visibility combination of orange and dark brown. For Jersey Central's tugs, high-visibility greens replaced the old style olive drab. Colors like grey-green and dark blue unrelieved by contrasting color are just as unwise for ships as they are for motor transport. Our contemporaries seem to have forgotten the fact that Julius Caesar used blue paint on the rigging of his triremes because he wanted to hide them.

Last year, called upon to select colors for the ferry boats of a commuter railroad, the problem was to achieve maximum visibility and to minimize the squat appearance of the vessels. We have already talked about how color works to expand or contract a workroom. It can be made to perform similar spatial tricks with the apparent proportions of a vessel. The proposed color scheme here involved colors getting progressively lighter from waterline to funnel. Red, two shades of green and white were used. The combination achieved both of the goals which had been set. The railroad clients soon reported the added bonus of heightened morale among crew members and an increase in the advertising value of their marine equipment. Soon we shall be putting to work principles of color engineering to make cramped quarters for the United States Navy crews a better

place to live in. The Navy knows how much high morale contributes to overall efficiency.

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Lighting, too, poses a safety and efficiency problem in the submarine. The color quality of the light source can change the apparent color of the surroundings. Light from fluorescent types of fixtures also has the effect of constricting the pupil of the eye, thus handicapping vision in close-up work. For example, in one of the best commuter railroads, newly conditioned coaches which set a high standard for lighting intensity caused as many complaints as hosannahs because they provided a dazzled condition known as cotton in the eyes.

Low and High Intensity Effects

The Swedish Navy conducted an interesting post-war experiment to prevent night blindness, introducing a tempered brown light emergency system in addition to the ordinary white light. For the illumination of chart cases and navigation instruments, brown lamps were used, each with a rheostat by which the intensity of light could be adjusted. Thus, navigation officers and other members of the deck staff, coming out into the deck from bright indoor light, would be spared the usual half-hour period it takes for optical adjustment to the conditions of night vision. During the course of the Swedish Navy's experiments, red and blue light were tried and discarded for this purpose because they caused color confusion. The neutral brown tint, similar to bottle glass, was a preferred solution for the problem.

Safety demands that busses and automobiles be visible against a variety of backgrounds and under varying conditions of light. Some years ago the National Safety Council and education officials chose light chrome yellow as standard for school busses. This yellow is highly visible in daylight and under headlights at night. Dim illumination does not turn it black. It contrasts strongly with highway white or black and with the blue of the sky. The exact shade of yellow has been specified in the Manual on Uniform Traffic Control Services for Streets and Highways published by the American Association of State Highway Officials. Such standardization also fulfills another of our criteria... instant recognition. It would soon come to be associated with school busses in the motorist's mind, and would make him extra careful. This yellow is especially effective against backgrounds of snow in winter and the greens of spring and summer.

Visibility and Control

Legislation has not, unfortunately, followed suit in most cases. A study by the Massachusetts Registry of Motor Vehicles shows rear-end collisions to be the most prevalent type of highway accident, yet no state law anywhere demands that fronts or rears of busses or trucks be painted in conspicuous colors. Black, yellow or white chevron stripes, with horizontal stripes for contrast, would be a most effective solution.

New Jersey studies show that six out of ten motor victims meet death after dark. In New York three-fourths of all pedestrian fatalities occur in darkness. It is four times as hazardous to cross a street at night, although there is only one-third as much traffic. The average automobile, carrying thirty-mile-anhour lights, whizzes along at fifty or more on America's 113,450 miles of improved but unlighted highways. Commercial and private vehicles alike avoid the very colors we have shown to be the safest because less visible combinations show less dirt. (Actually, results prove that whenever color engineering steps in, so does employee interest in keeping vehicles clean, and even the private owner takes greater pride in his car's appearance.)

More important than actual brightness of highway illumination is light which reaches the surface of the road and which picks out objects clearly. Mere high intensity which causes glare can be a real hazard. In England the Ministry of Transport has tried coloring the highways themselves. Tests in the Channel Isles show that marigold concrete cuts down sun and headlight glare by forty percent. Colored roads correlated with maps may some day eliminate the need for route markers and help keep driver attention on the road ahead. Best of all, adding color to concrete costs very little and pigments are available which do not fade objectionably.

Between 1924 and 1932, when drivers were less familiar with multi-lane highways, Massachusetts safeguarded drivers on some roads by making the center lane of a three-lane highway darker than the two outside lanes. This technique is more effective visually and psychologically than the use of single lines in the same color. Coarse mosaic texture on the center lane made tires hum, reminding the motorist to use it only for passing. Where curves made passing dangerous, the middle lane vanished altogether, and the remaining two lanes were divided by a wide white line which clearly said don't cross! An especially effective addition to such a plan would be the use of a yellow dividing line, which shows up strongly against dark pavements and has the further advantage of showing up against partially cleared snow.

Color and Atmospheric Conditions

New problems confront the color engineer when he takes to the air. Blue sky, white clouds, fog, mist, heightened reflections from purer light in the upper atmosphere . . . all these present their own difficulties. To our overloaded airports and hard worked pilots and crews, the future promises even greater increases in air travel. It is imperative that we bring to the problem of air safety all the ingenuity and energy at our command. Correct color helps pilots spot other planes quickly . . . in the air or on runways where collision might otherwise result. Color also helps rescuers locate disabled craft forced down.

Studies made on the use of color in aviation have already produced important conclusions. A total of 26,784 observations of paint schemes on aircraft revealed that glossy sea-blue paint applied to the trailing halves of empennage and wing surfaces improved the visibility of aluminum models more than any other scheme considered. Among other combinations tried were an all-white plane, all orange-yellow, black on white, glossy sea-blue on aluminum or orange, orange-yellow on aluminum.

A recent National Research Council of Canada report shows that the failure of orange-yellow to be noticeable at a great distance is due to its yellow content. The Canadian council found that, in the air, yellow was very bad for recognition at a distance, but that orange of a reddish quality was excellent.

Temperature Conditioning by Color

On planes which operate in high-temperature parts of the world, an exterior coat of white paint contributes markedly to passenger comfort and to crew efficiency and morale. In tests, white painted over aluminum exposed to the sun's rays remained 28 degrees cooler than the same aluminum surface unpainted. In a DC 6 airplane this would mean cabin temperatures 15 degrees cooler. At Mexico City, in the spring, a plane painted with a white glaze paint and an unpainted plane were exposed to maximum solar radiation for one hour. The cabin of the unpainted plane was 10 degrees hotter. The surface temperature of the unpainted plane was 34 to 35.4 degrees hotter. The advantage of white paint, however, is lost in strong winds that cool the airplane and nullify the advantages of improved reflectivity.

The fact that color reflects heat as well as light has an important application to airport runways. Brilliant white runways reflect hot updrafts when surrounded by heat-absorbing low value grass green areas. Local air disturbances of this kind cause considerable landing hazard. Runways and rooftops which reflect the

(please turn the page)

Functional Color ... continued

same amount of heat and light as the grass or other surrounding terrain cut down bumpy air around and over landing fields. Colorwise, this means we want as little light-dark contrast as possible. Fortunately, we can use certain reds, browns or greys which have the same light-dark value as grass green, but which can still be seen by the pilot against the green background.

In the cockpit of an airplane it is highly desirable to have color and lighting that will assist the pilot and crew to adjust the eye to the conditions created by light inside and outside the plane. For instance, at night a black interior is desirable, so that the lighting conditions inside match those outside and do not call for adjustment of the eye muscle as vision is shifted from interior to exterior. But the black cockpit would offer too much of a contrast to outside seeing conditions during the daytime. One compromise is to use a grey wall and ceiling and maroon flooring, both of which darken under red lighting inside. Dials are yellow with black markings for contrast to provide legibility.

Red floodlighting of the cockpit interior is satisfactory from this standpoint of limiting contrast of visual brightness inside and outside the plane, except during electrical storms. Then, as the lighning flashes through the cockpit windows, the pilot would suffer less from lighting contrast if the plane interior were floodlighted in white.

Some Domestic Uses

The qualified color engineer, who works in industry and in every phase of transportation, has also much to add to safety in the home and efficiency and progress in education. A good deal that already has been said on the use of color can be readily applied to these areas of our daily life. A poorly lighted room with a bad exposure can be made more cheerful by painting it in colors which provide harmony and increase light reflection. There will be fewer bumps, bruises and falls when twilight zones are properly colored and lighted.

A flight of stairs can be made safer by painting the risers with colors which are not only in excellent taste but which reflect more light. The risers of dark cellar stairs, a menace in almost every home, should be painted white with fluorescent or phosphorescent paint on the risers. Structural hazards like low door frames should be painted in colors which attract the eye.

We all know that the American home is — statistically at least — one of the most dangerous of places. But the accident rate in the home can be substantially reduced when more architects, builders, decorators and the average man and woman become better informed about color engineering.

When children leave home for school, the color of their clothing is a factor in their safety. The United States Bureau of Home Economics advocates bright colored garments, especially for children who use city streets. These bright outer garments will be highly visible to motorists when children are crossing or playing in the street. Winter clothes in bright colors are especially recommended, as vivid reds, blues, greens and oranges are more striking to the eyes than brown, navy blues, greys, drabs and maroons against a city background. Incidentally, adults could

also give more thought to visibility of clothing, particularly if they intend to walk on darkened roads at night.

A Factor in Education

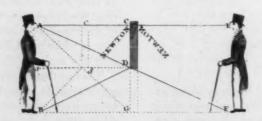
In a truly modern community a child will go, dressed for safety, to a school in which color engineering is a vital factor in his education. He will sit in schoolrooms whose colors operate to facilitate sharp vision, to stimulate mental alertness and to encourage a willingness to learn. Drab, dull, demoralizing tans and greys are being replaced by colors which eliminate glare, diffuse light properly and exert a relaxing influence, so that eyestrain, tension, and fatigue, three of the great enemies of education, are greatly diminished. A spokesman for the New York City Board of Education has declared, "Light colored walls and ceilings, together with sufficient natural or artificial light, will produce an environment which promotes health, is conducive to study and produces a cheerful and artistic effect."

Carefully thought-out color engineering programs provide a psychological change of pace by providing variety in the color of schoolrooms. Thus at one New York City high school, the lunchroom has been painted peach (a color found to be stimulating to the appetite) to contrast with the blue-green of the classrooms in the school. In this same high school, color engineering has been applied to the shop classes, just as it was applied in industry, to promote safety and efficiency. Color has also made obsolete the old slate grey blackboard. This source of classroom eyestrain is being replaced by green boards or, as in one New York City school, by yellow boards and black chalk, an especially good combination for maximum legibility.

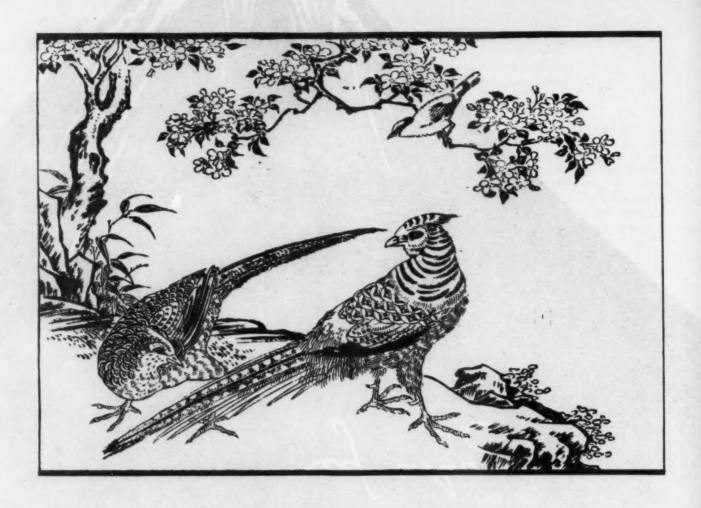
These changes in the classroom will mean a future generation less plagued by defective vision. What price the nation now pays for eye-strain originating in the schools is shown by the fact that twelve percent of the graduates of West Point and Annapolis are unable to take up their commissions because of defective vision developed during the years of intensive study in badly lighted, incorrectly colored rooms of the military and naval academies! Oddly enough, a great many good ideas about color and its effect on morale and efficiency come to us from our more modern prisons, and certainly we should not allow our schools to lag behind.

In all the areas we have been discussing color is used to mark fire plugs, first-aid kits, emergency doors, etc. The effectiveness of such markings depends not only upon high visibility, but also upon standardization. Possibly red has become a danger signal for psychological reasons, but a red flag means danger today because people all over the world have agreed to use it that way. Instant recognition is as important as high visibility. Once the color engineer has done his job, industry and the state would do well to reach an agreement on as many signals as possible.

Today, all over the nation, in production, in transportation, at home and in the schools, color engineering has joined the fight against accidents and inefficiency. The color engineer's contribution grows continually as its value becomes more widely recognized and its benefits more widely understood • END

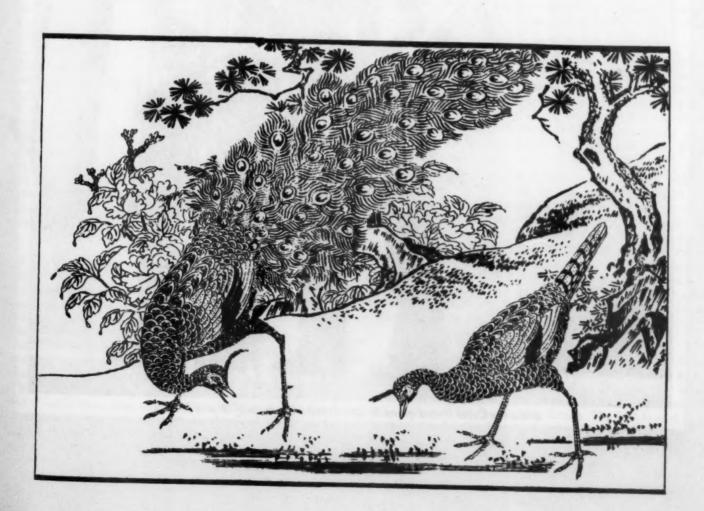


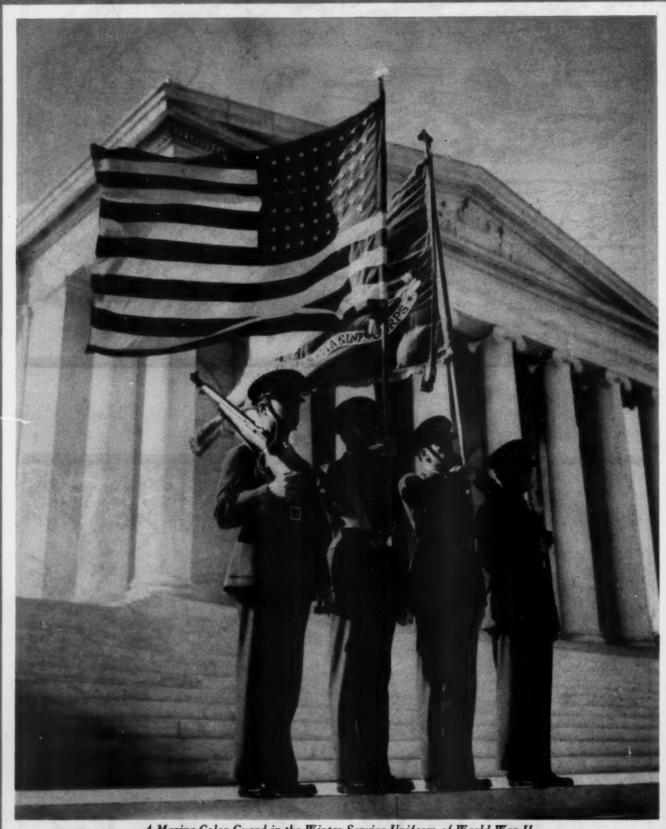
Pages from Japanese Design Itam d book











A Marine Color Guard in the Winter Service Uniform of World War II



FANCY PANTS

A SHORT HISTORY OF THE UNIFORM OF THE MARINES

BY COL. ROBERT H. RANKIN

Thanks to advertisements for men's wear, we have long since been sold on the idea that clothes make the man. Although it takes more than a uniform to make a soldier, the fact remains that a soldier suit does give a man's morale a lift and makes for the much desired esprit de corps. The Marines can readily testify to the truth of this, and pride in the uniform has been traditional with the Corps. Leatherneck uniforms have always been colorful, and they provide an insight into military fashions during the past hundred and seventy-five years.

As to uniforms in general, no one knows for sure just when they actually first appeared. Of course, armor itself was in the nature of a uniform, and it is possible that the lads in the tin pants were the first to attain anything like a uniform appearance. We do know that the knights were in the habit of wearing distinctive surcoats and jupons over their iron suits, and these may be regarded as something of a uniform. For instance, at one time English knights were a white surcoat, emblazoned with the red cross of St. George, while the Scots gentry of the same period were a blue garment decorated with a white St. Andrew's cross.

Quite possibly the first uniforms, in the sense that we know them today, were those worn by the Papal Guard, designed by no less a worthy than Michelangelo himself, and by the scarletclad Beef Eaters or Yeomen of the Guard of Henry VIII's time. Interestingly enough, these organizations are still in existence, and today they wear much the same uniform as they did at the time of their inception.

The Eighteenth Century

A review of the subject reveals that military garb has pretty generally been patterned after that worn by civilians. Thus, during the Eighteenth Century most military organizations wore square-cut coats with large, turnback cuffs and lace ruffles; long waistcoats pocketed like the coats; stockings drawn up over the knee and gartered below it; lace neck cloths; square-toed, buckled shoes; and three-cornered hats. About the only difference in this garb was the fact that the military wore distinctive colored facings on their coats.

It is rather interesting to note that nations successful on the field of battle have often imposed their military fashions on the world at large. For instance, with the French military successes early in the 1850's, practically all nations clothed their troops in some variation of the French uniform, including even the absurd kepi. Then along in 1870 came the disaster of Sedan,

and immediately the whole world switched to German-inspired uniforms, complete even to the spiked helmet or *Pickelhaube*.

Early Use of Green

Getting back to the Marines, we find that the first members of that fighting organization (founded in 1775) were outfitted in green; that is, all except those who served with John Paul Jones. It isn't known at this late date whether he couldn't secure green cloth of the proper shade or whether he just wanted to be different, but in any event the redoubtable Jones turned out his Marines in scarlet and white similar to that worn by His Majesty's sea soldiers.

The coat of the Continental Marines was tailored with turnback skirts, faced with white for officers, and it was liberally sprinkled with decorative buttons bearing a foul anchor device. Officers wore a white waistcoat and breeches, the latter edged with green, and a white ruffled shirt. Black boots and a black cocked hat with cockade and colored plume completed this rig.

The get-up of the enlisted men was just about as fancy. Their coats were faced with red, and they wore buff breeches, green ruffled shirts, buff woolen stockings, and black shoes with pewter buckles. A small, round, derby-like hat with white binding topped off this outfit.

Origin of Leathernecks

A particular abomination of all early uniforms was the leather stock, the wearing of which caused the Marines to be dubbed Leathernecks. There is a legend to the effect that this leather choker was originally worn to protect the neck and throat from cutlass slashes, but that is pure fiction. The fact is that it was designed for the simple purpose of making the wearer hold his head erect at all times, and it encircled the neck so tightly that it was impossible to turn the head.

That the stock was a rugged article of wearing apparel is (please turn the page)



Continental Marines of 1779

Fancy pants . . . continued

testified to in a letter from a Major Daniel Carmick to an early Commandant of the Corps, in which communication he discussed the issue of a Marine's possessing more than two stocks at a time. "Two stocks should be sufficient for five years," he wrote. "I wore one myself for nine years, and then laid it aside because it was out of fashion, not that it was any the worse for wear." It is reported, incidentally, that the major was just as tough as the leather in his stock.

Still another absurdity of the times was the three-cornered cocked hat. More often than not it was improperly fitted and was difficult to keep on, particularly in a wind. More than one seagoing Marine officer complained officially that they had trouble with enlisted men's hats blowing overboard. Each hat lost was charged against the man's pay, and since the hat cost around two dollars, there was often little enough left out of his monthly pay of seven dollars.

The Nineteenth Century

By the turn of the Nineteenth Century the Leathernecks were wearing what was to become the traditional scarlet and blue for the first time. Uniforms in all services were running to extremes, influenced no doubt by the fancy outfits worn by some of the British, French and Hessian regiments in this country during the course of the Revolutionary War.

Up until the War of 1812 Marine uniforms underwent numerous changes, and prior to 1804 the only attempt at uniformity was through letters from the Commandant to commanding officers. However, in 1804, the first formal uniform regulations were issued by the Secretary of the Navy.

At this time officers were wearing long blue coats with scarlet lining and lapels, together with a scarlet vest, blue breeches, black boots and black cocked hat with scarlet plume.

Enlisted men were turned out in blue coats and pantaloons trimmed with scarlet, scarlet cross belts and vests, and shakoes with a scarlet pompom in front. The hair of both officers and enlisted men was queued and powdered according to the custom of the times.

In spite of the fancy uniforms this was the season of severe

and brutal discipline. Flogging was the usual form of punishment. The lashes of the cat were laid on at the tap of a drum, and the whole thing was conducted with considerable ceremony. Commanding officers had extremely broad powers in administering discipline, but Congress, in 1799, specified that CO's could not award more than twelve lashes. Other punishments of the time included shaving half the head, drumming a man out of garrison, and hard labor with ball and chain.

Old Marine Corps records reveal that in 1820 a private was sentenced for desertion to wear an iron collar round his neck for four months with a 6-lb ball and forfeit all the pay; then be drummed out of garrison. For being asleep on his post another Marine was sentenced to walk post with iron collar and balls for two months. A rugged breed they must have been in those days!

Changes in Uniform Regulations

It is significant that the early commandants of the Corps invited suggestions from both officers and enlisted men, and such suggestions were directly responsible for many sensible changes. In 1819 eight junior officers signed a letter to the Commandant in which they asked that lower grade officers be allowed to wear a uniform patterned after that worn by the enlisted men, pointing out that junior officers could not afford the high cost of a dress uniform. The Commandant approved the request, and in 1820 the Secretary of the Navy issued regulations which permitted junior officers to wear the same style shako, blouse, and trousers as were provided for enlisted men.

This proved to be so practical and economical that a year later the Commandant requested the Secretary of the Navy to approve an undress uniform in order that the necessity of the officers wearing their full uniforms on ordinary duty may be obviated and a less expensive dress be substituted. The request was approved, and an order was issued prescribing an undress uniform for officers, consisting of a plain single-breasted coat



Spotswood's or Gooch's Marines - 1741-42



instead of the elaborately decorated double-breasted affair worn for dress occasions.

Blue and scarlet predominated in the Marine uniforms until 1833, when President Andrew Jackson approved a practical outfit with grass green coats and light grey trousers. However, the green cloth had a tendency to fade, and in 1839 there was a return to the traditional colors.

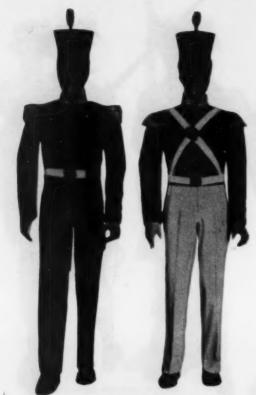
At this time officers wore for dress a dark blue double-breasted coat with standing collar and red slashed cuffs. Trousers were blue with a scarlet stripe, and a crimson net sash with bullion end fringes was passed twice around the waist and tied on the left side. Black boots and a black beaver hat with red cock feathers completed the picture. Enlisted men wore a single-breasted blue coat, sky blue trousers, white cross belts, and a shako with red plush pompom.

Uniforms in the Civil War

During the period which included the Civil War, Marine uniforms, in common with those of most other military organizations, showed a decided French influence. Officers wore a loose, double-breasted frock. Enlisted men and officers serving with troops wore light blue slacks, while staff officers wore dark blue trousers with a scarlet welt. Enlisted ranks wore a comfortable, single-breasted frock coat. Field officers and above wore a chapeau, but company grade officers and below and the enlisted men wore an awkward French shako, that of the officers having a gold net pompom, while the headpiece of the troops was decorated with one of red worsted. During the Civil War the shako was replaced by the kepi. The headgear was decorated with a device consisting of the shield of the United States, enclosed in a half wreath bearing a bugle and the letter M. This cap device, which was worn between 1859 and 1868, was the



Marine Corps Uniforms of 1810



Marine Corps Uniforms dating from 1834



Uniforms worn in the Mexican War 1846-48

Fancy pants . . . continued

third distinctive insignia to be worn by the Leathernecks. The insignia worn previous to this, and which appeared simultaneously between 1840 and 1859, consisted of the letters U S M enclosed within a wreath or a foul anchor circled with laurel.

In 1868, the eagle, anchor and globe insignia, substantially the same as that now in use, was adopted. Along about this period the German influence began to be felt, and both enlisted men and officers were a spiked helmet, but by 1898 the uniforms were becoming somewhat more sensible and soon developed into approximately the dress blues worn today.

For the six years between 1898 and 1904 Marines were on various hard fighting assignments all over the world and the field uniform at least became more utilitarian. Enlisted men fighting the Spanish in Cuba and the Boxers in China wore a coarse grey blouse and trousers, dark blue flannel shirt, high canvas leggings and campaign hats, the latter creased fore and aft. Officers wore a loose-fitting single-breasted blue coat with mohair trimming, coarse grey trousers, canvas leggings and campaign hat.

Marines serving in the Philippines in 1900 had the dubious distinction of being the first to wear the khaki campaign uniform, including breeches that laced and fit the leg snugly below the knee, and canvas leggings.

In 1912 the distinctive field green winter uniform was adopted, but due to difficulty in procuring suitable material of the right shade, it was not worn until 1914.

The English Influence

With the entry of the United States into the First World War the English influence began to be felt, and officers donned the then new Sam Browne belt, the enlisted men were required to go from bad to worse by giving up the awkward laced canvas leggings for the imbecile aberration of spiral puttees, and the shallow English-type tin hat was issued to all hands. Then, in January 1918, all Marines serving with the American Expeditionary Force were outfitted in regular Army issue olive drab. This change was based to some extent on problems of supply, but more particularly on the desire of General Pershing to have all American forces in the same uniform in order to prevent identification by enemy intelligence.

The English influence was again felt in 1928 when, in the most recent change to be made in the uniform, roll collar winter green and summer khaki blouses appeared for the first time. However, the traditional leatherneck collars were retained for the blue uniforms.

Every war, including some of the smaller ones, has brought about practical changes in uniforms. During the Second World War Marines in the Pacific wore a sensible, loose, camouflaged outfit, this being the first time that common sense and judgment were used in outfitting the fighting man for service in the field.

We can't forget the lady Marines, Heaven bless 'em. In the First World War they wore a feminine adaptation of the green service uniform, but during the Second World War they turned male heads with specially tailored outfits. For winter they appeared in green wool, and in summer they sported green and white striped seersucker during duty hours and all-white outfits for dress uniforms.

Marines on the fighting front today are clothed in practical battle outfits but those stateside appear in the well-known green service uniform and the by now famous blues. What the future may bring no man knows, but it is reasonable to expect that the soldiers of the sea will always be counted among the best dressed men of the year • END

Tennessee
Eastman
Company
...a saga in
Acetate





A VIEW OF THE KINGSPORT, TENNESSEE PLANT OF THE TENNESSEE EASTMAN COMPANY

Tennessee Eastman Company ... a saga in Acetate

The story of the Eastman Kodak Company, one of the oldest and most famous American industrial enterprises, is well-known. Its scientific and chemical contributions in photography and the allied fields is a story that has been told on numerous occasions. Deservedly acclaimed for the integral part it has played in the industrial and cultural growth of our nation, the name Eastman has come to be know all over the world. A story that is perhaps less known but equally absorbing as any of the achievements for which the Company is famous has been enacted within the Eastman organization during the past few decades. It is a tale still in the making . . . and one of special interest to the textile industry. It is a veritable saga in acetate.

The story starts with the Eastman Kodak Company, parent company of the Tennessee Eastman Company, which manufactured cellulose acetate in 1909 and onwards on a modest scale for use as a safety film base both in the cinema and in home movies. During World War I the process was turned to use for the manufacture of airplane fabric dope on a more extended scale. As a result of these operations, by the 1920's the corporation had perfected in detail a unique low-cost process for production of acetic anhydride, one of the key chemicals in manufacturing cellulose acetate directly from

wood acid. It was this important process which formed the foundation stone on which the present Tennessee Eastman Acetate Yarn operation and plant were built.

At that time the production of cellulose acetate with the purity necessary for photographic use was, even on the scale required by Kodak, not economical. It was seen, however, that if large quantities could be utilized for purposes other than film the cost of manufacture could be reduced, the price lowered and the market further extended. The possibility of selling cellulose acetate flake to existing acetate yarn manufacturers was first investigated, but proved to be limited, and the possibilities of actual manufacture of acetate yarn was then pursued. Encouraged by their vast technical knowledge and competence in related fields, the T.E.C. chemists and engineers went into action, with the result that in 1928 a pilot yarn producing plant was put in operation.

It was no easy matter in the initial stages to find all the answers... correct filtration methods, the right dope formulae, the most efficient metal for the spinneret with orifices so small as to be invisible to the naked eye, and the winding methods which would prove successful. After months of experimentation and hundreds of trials the first yarns were wound on bobbins; at that time the daily production reached two pounds of yarn! Soon afterward the first sample orders

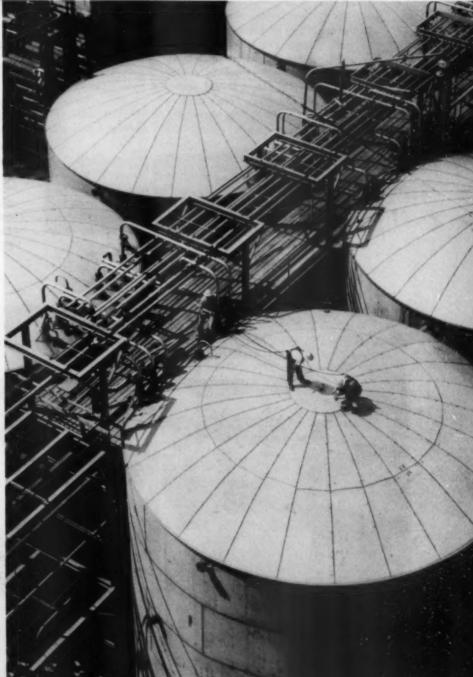


were shipped...11 pounds of yarn...to the famous old silk manufacturing firm of Cheney Brothers, in South Manchester, Conn.

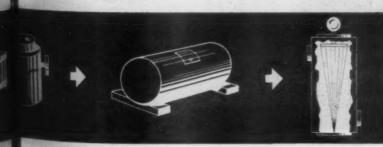
Late in 1930 consideration was given to the feasibility of building a plant specifically for the production of cellulose acetate yarn. Approval for the expansion was given early in the following year, and the trade name for the new product was designated . . . Eastman Acetate Yarn. The corporation was confident that its creative work in the cellulose acetate field would win new markets and further extend the evergrowing frontiers of the man-made fibers industry. At the end of two years, in 1931, daily production of continuous filament yarn reached 287,000 lbs.

First Uses for Eastman Acetate Yarn

One of the first outlets for filament yarn was in the men's hose field. Acetate yarns or fibers resist the dyes commonly used for cotton and rayon; thus, by knitting this yarn with one of a different type, cross-dyed two-tone effects and patterns for socks could be conveniently and inexpensively produced. This outlet is still an important one. The smoothness of the yarn and its inherent softness also resulted in its use for bridal and lingerie satins, for taffetas and sleek knitted jerseys, as well as for the sheer ninon types popular for (please turn the page)



A view of the large storage tanks which are part of an elaborate acidrecovery system, important in manufacture of Eastman cellulose esters.



A Saga in Acetate . . . continued

glass curtains.

In 1935 experiments were undertaken with a staple variant of acetate, soon launched under the name of *Teca*, an acetate fiber chopped into short lengths and crimped in a way similar to that of wool fibers. The variant was an immediate success because it gave new possibilities for blending with other fibers to create textures never before possible, and it gave new openings to engineer constructions in which the qualities of different fibers were combined for a specific end use.

Teca was an immediate success; it already had the proven advantages of softness, resilience, low moisture absorption and shrinkage; in addition, it had other individual characteristics which opened up new possibilities. Because of its woollike appearance it was first introduced in soft dress crepes resembling sheer wool and in knitted dress fabrics and sweaters. But its greatest initial successes were obtained in spun rayon blends, where Teca's resilience lent crush-resistant qualities to the fabric and its shrinkage-resistance resulted in the first acceptance of rayon blends by commercial laundries.

Fabric Developments

Next came another significant advance. Inspired by new ideas of the fabric development department for revolutionizing men's summer suitings, mill men began experimenting with Teca in this fertile field. One highly successful combination was of Teca and tussah silk and this fabric, with

rayon later taking the place of silk, still remains a classic item for men's and women's suitings.

In 1941 Eastman's resources were turned to the war effort. Satins, crepes and twills made of Eastman filament yarn were used in a host of wartime applications ranging from nurse's uniforms to cargo parachutes, in which the qualities of coolness, ease of cleaning, mildew-resistance, etc., made them acceptable. Today some ninety percent of Eastman's production of Estron acetate, as it is now called, finds its way into apparel, with the balance for household and industrial applications.

THE CHROMSPUN STORY

FOR MANY YEARS EASTMAN had been interested in dyes suitable for use in photographic work.

This naturally led to the development of general dyeing techniques applicable to acetate yarns. As long ago as 1945 this resulted in the establishment of another offshoot of their growing technical services . . . the Fabric Dyeing Service Laboratory located in New York. Among the objectives set by the growing industry was the achievement of new dyes and techniques which should endow acetate with colors perfectly fast under all conditions, a demand arising from such defects

At the starting line: Purified wood pulp or cotton linters, taken from the cotton seed efter the apinnable cotton has been ginned, provide a source of raw cellulose.

Into this specially built acetylating mixer go the purified cellulose, a catalyst, a vinegary solution of acetic anhydride and acetic acid. Few erful machinery stirs the mixture during reaction.

as gas-fading in the apparel field and gas- or sunlight-fading in the drapery and upholstery fields.

It had already been known that it was possible to inject dyes, pigments and other colors of various types into the liquid dope before spinning, thus producing a colored yarn similar in weaving possibilities to a regular yarn-dyed product. In seeking to project this somewhat difficult technique into a complete range of colors and tones for every use, Tennessee Eastman's research teams investigated literally many thousands of coloring agents. The first success was reached in a perfectly fast and fully washable black yarn, soon adopted for use in the Navy's neckerchiefs for sailors. This now classic development was one of the earliest commercial examples of *Chromspun* and it paved the way for the advent of durable color in drapery and upholstery fabrics which is taking place today.

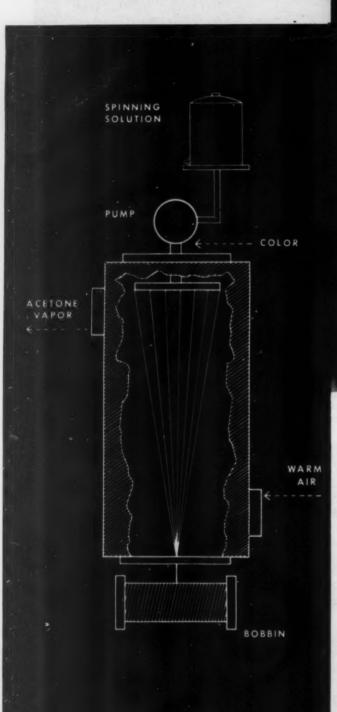
The first big field in which applications of Chromspun fast colors were developed was in men's wear. This was in part because of the longer wear-life expected of men's summer suitings, with fastness of prime importance, and in part because the range of neutral colors generally employed in men's summer suits lent itself to a more rapid development than did the pure colors popular in women's apparel. In the latter class elimination of gas-fading constituted the big appeal, and a ready market was soon opened when it became apparent that in cost Chromspun yarns were comparable to



From the storage jars the cellulose acetate solution plunges into cold water, precipitates into flakes. These solid white particles are then washed in clear water until free of acid.

Liquid dope for acetate fiber is prepared in giant dissolving mixers such as this. The cellulose acetate flakes are mixed with acetone and other components to produce a clear solution thick as molasses.





In the spinning, dope is forced through almost invisible holes in a spinnered

A Saga in Acetate . . . continued

yarn-dyed items. True colorfastness was now the chief selling point in the women's field. And with the development of a considerable range of hues free from gas-fading and of a hitherto unequaled degree of fastness to light, the value of Chromspun in another field soon became apparent

The luxurious qualities of acetate yarns had previously been little used in the drapery trade by reason of the inability of existing acetate dyes to hold their own in such an exacting field. With the introduction of Chromspun, acetate yarns on the contrary, were found to be not merely on an equal but actually on a qualitatively advantageous basis.

There is today already a range of 20 or more basic colors in Chromspun, and it must be remembered that when the possibilities of blending and combining them both in staple and with the aid of special weaves is taken into account, this represents an almost limitless variety of shades, pure and mixed, heather and pastel, striped and patterned. In addition,



Eastman's Estron continuous filament yarn is wound on the cone, ready for shipment to the mills.



Teca, Eastman's staple Estron, starts as continuous filament yarn, is then crimped and chopped into short lengths.



The short-fiber staple is spun into yarn, then wound in forms suitable for mill use.

the possibilities for cross-dyeing, where Chromspun is woven in combination with other fibers, are exceptionally rich.

Chromspun Answers a Need

It will be seen that Chromspun presents a new opportunity for profitable merchandising at every level. It is immediately evident that Chromspun answers a crying need. Can you put yourself in the place of a housewife, whether wealthy or poor, who wishes for gay colors and freshness in her home yet who cannot afford the money or the time to refurnish the windows every year or replace the slip covers? Here is the answer to her need in a fabric which is brilliantly fresh and will stay fresh looking as long as the threads hang together. For the first time there are available to her fabrics made of a fiber which will stand up against the inexorable action of sunlight and atmosphere. As soon as she has become aware of this opportunity, she will respond to it, and the result will

be profitable for manufacturer, store and housewife. This is a revolution that has undoubtedly come to stay.

With a market alert to the developments of potential volume possibilities, with a public that is receptive to products that hold promise for better living, Eastman's saga of acetate takes on new interest with the perfecting of Chromspun. It is a saga that is typical of the progressive neverending drive towards perfection . . . a saga still in the making.

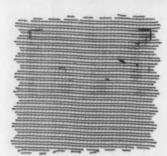
For some authentic new examples of fabrics woven with Chromspun...please turn the page



This COHN-HALL-MARX heavy ribbed faille receives its richness of coloring and depth of tone from the use of Chromspun in both warp and filling.



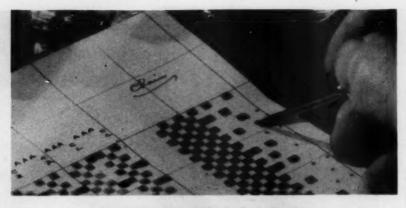
For at-home dressy clothes, this FULLER fabric, made of a combination of Chromspun acetate with Lurex thread woven in is eminently suitable.



Curtain marquisette of all Chromspun by CAMEO is guaranteed colorfast for the life of the fabric, thus eliminating matching problems for the consumer.



For after-five separates, a geometric pattern with two-tone effect on a supple taffeta base. The fabric is woven entirely of Chromspun by JUILLIARD.





Taffetwill by STONECUTTER achieves a European tie silk character and hand through the use of Chromspun. This might be called a transition fabric, between crisp and soft.

WORKING WITH THE MILL

Take the case of a greige goods mill serving converters who in turn serve the apparel trades. In planning fabrics for a new season, the technician, stylist and salesman work closely with the converter envisioning the result of the design ideas which appear to lead the trend. But patterns for new fabrics must largely be experimental and developed in the greige, where the result cannot be properly judged until the converter has received test yardage and run some finishing experiments for hand, etc. as well as to see how the construction will respond to color.

For many types of fabric the advent of Chromspun makes it possible for the mill to present new patterns to the converter — and to interpret his ideas — more graphically, more quickly and more cheaply. Pattern and color possibilities are considerably broader, ranging from solid through iridescent, two, three and multi-color effects. Loom finished patterns can be shown in full color in no more time than it takes to weave greige goods of equal complexity. The converter sees exactly what he will have to offer the manufacturer.

Many interesting new fabrications combine Chromspun with other yarns; for example, Stonecutter's Ribbanda, which employs multi-color ribbon stripes of Chromspun in a 6, 4 or 3 ply cotton and rayon faille. This is over-dyed by the converter for background colors, the possibilities being many more than any one season's fashion requires. Here the finished result is more readily visualized than in the case of plain greige goods. Most important in this type of construction, multi-colors can be introduced which are not possible in piece-dyed fabrics.





From GOODMAN & THEISE comes this Jacquard woven fabric with contrasting pattern. It is all Chromspun in warp and filling.



This TITUS BLATTER drapery taffeta of 100% Chromspun is colorfast, will not crock and resists deterioration from sunlight and radiator heat.



Wearing quality, luxury feel and uncrushability have made for great acceptance of this VALHALLA jersey. Chromspun and 10% nylon.



A Chromspun and nylon sheer by PARLIAMENT, with the advantage of washability, has the desired feminine and fashion qualities for blouses and dresses.

AMERICAN FABRICS RAYON QUIZ

The statements listed below are to be answered <u>yes</u> or <u>no</u> on the lines following the numbered list. A correct <u>yes</u> carries 4 points; a correct <u>no</u> scores two points and two additional points should be added for correctly giving the reason. Score as follows: 65, passing; 75, good; 90, excellent. Refer to the section below for the proper answers and reasons.

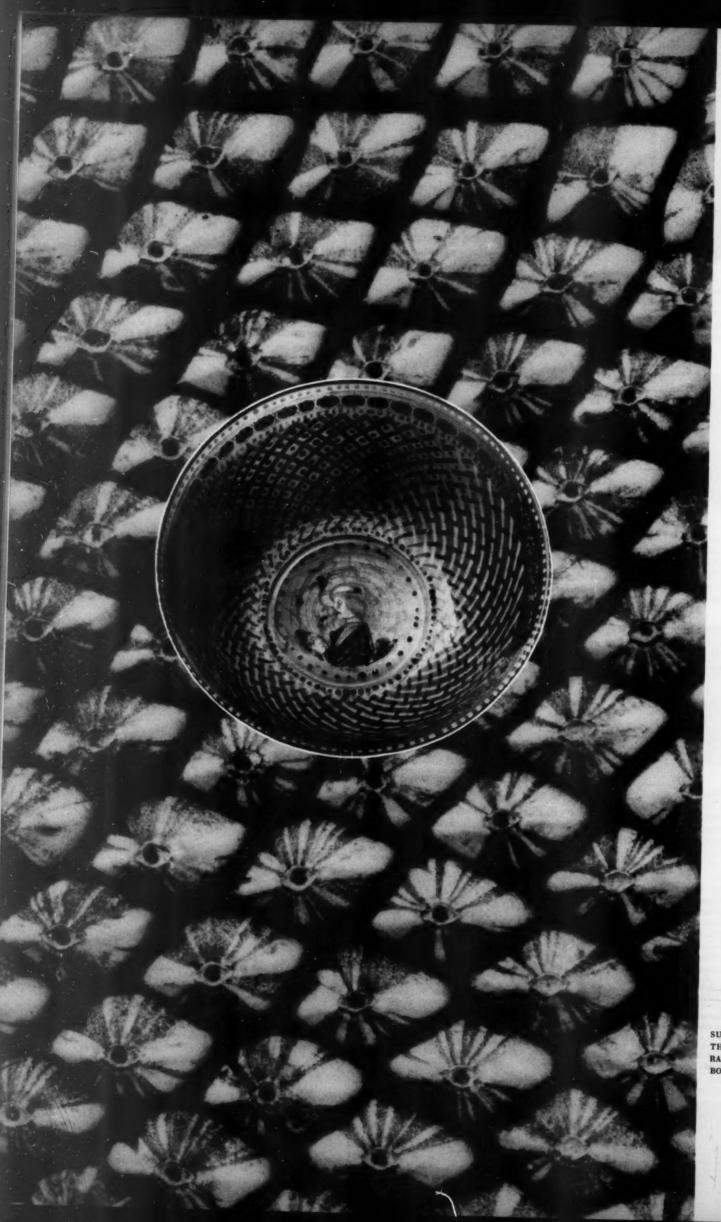
1	Rayon belongs to the organic group of textile fibers.
2	An example of a regenerated textile fiber is rayon.
3	René de Réaumur, French scientist, was the first to mention that it was possible to produce a textile yarn by mechanical means.
4	The Father of the Rayon Industry is Count Hilaire de Chardonnet.
5	Dr. Robert Hooke took out patents for a glass-like fiber in England, in 1857.
6 7	The first commercial production of rayon began in the 19th century. The first successful rayon plant was established in Marcus Hook, Pennsylvania in 1911.
8	Fibro, a rayon staple fiber, is noted for its properties which resemble cotton fiber.
9	Louis Pasteur was noted for his development of a fiber that in time was to be known as rayon.
10	An orifice and a spinneret are synonymous.
11	The Father of the Rayon Industry in this country is Sir Samuel Salvage.
12	The viscous solution used in the manufacture of rayon is known as pfleiderer.
13	The word xanthate means red in color.
14	The viscous solution used in making viscose rayon is acidic in nature.
15	The hardening or reverting bath used in making viscose rayon is acidic in nature.
16	Cross and Bevan, English scientists, were the first to use wood pulp in the manufacture of what is today known as rayon.
17	Aging of the flake or alkali crumb is a minor operation in rayon manufacture.
18	Fiber and filament are synonymous terms.
19	Tricolette, the first rayon dressgoods fabric to be knitted, did not appear on the market until about 1935.
20	Cotton linters or chips of spruce, pine or hemlock trees, all of which may be used as the base for the manufacture of rayon, contain about 75% pure cellulose.
21	Spinnerets are made from a combination of gold, silver and copper.
22	
23	Carbon disulphide will cause the crumbs of cellulose viscose to become orange in color.
24	The basis for spun rayon is rayon staple.
25	

Answers To Yes-No Statement

1. Yes. 2. Yes. 3. No. Dr. Robert Hooke mentioned this fact in 1664 in his book Micrographia. 4. Yes. 5. No. These patents belonged to Sir Joseph Swan. 6. No. The first commercial production began in 1905. 7. Yes. 8. No. Properties of Fibro closely resemble those of worsted.

10. No. Louis Pasteur is known as the Savior of the Silk Industry. 10. No. The numerous openings in the spinneret are known as orifices.

11. Yes. 12. No. Pfleiderer is the German term for shredder and is the name of the machine which shreds the sheets which have been soaked in caustic soda into flake form during rayon manufacture. 13. No. Xanthate, from the Greek, means orange; the color of the orange crumbs... cellulose viscose xanthate. 14. No. The solution is alkaline in nature. 15. Yes. 16. No. Originally done by a weaver in Saxony, F. G. Keller, in 1840. 17. No. This is one of the most important steps in rayon manufacture. 18. No. A filament is a fiber of indefinite length, continuously drawn. 19. No. Tricolette first appeared in 1924 and was extremely popular for many years. 20. No. There is about 96% pure cellulose in these four basic stocks used to manufacture rayon. 21. No. Platinum and iridium are combined to make spinnerets. 22. No. Avisco 15 is a 15-denier, viscose staple used for carpets. 23. Yes. 24. Yes. 25. Yes.



SUNFLOWER SEEDS IN THE POD. Inset: DECORATED VENETIAN GLASS BOWL, 17TH CENTURY.

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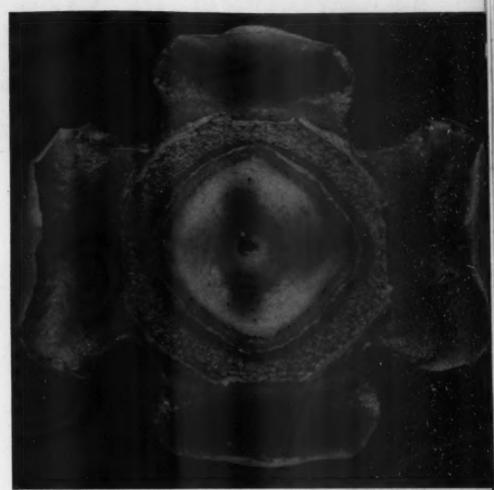
NATURE

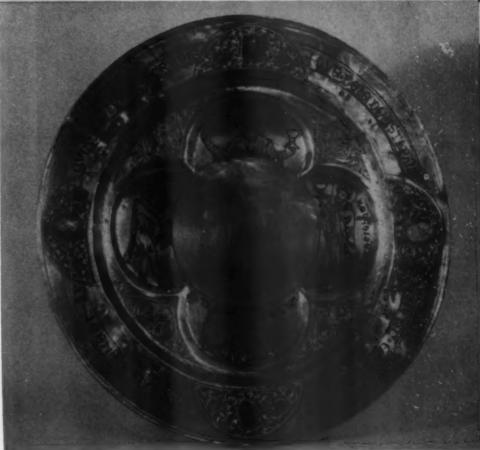
gives to man inspiration in her hidden arts

CREATIVE ART FORMS are a manifestation of man's highest spirit. In an organic union with what is useful and material they endow it with another quality . . . high aspiration and a reaching out towards perfection. Deprived of the creative element, what is useful remains useful without appeal,

(please turn the page)

Above: ROSE-APPLE SEED-POD (EUGENIA JAMBOS). Below: SILVER-GILT, JEWELED PATEN, EARLY 13TH CENTURY GERMAN. ORIGINALLY MADE FOR ABBEY OF ST. TRUDPERT.









FERN UNCOILING IN SPRING (POLYPODIUM AUREUM). Above: HEAD OF A BISHOP'S CROZIER, EARLY 13TH CENTURY,

Hidden Arts . . . continued

without the power to create emotional response.

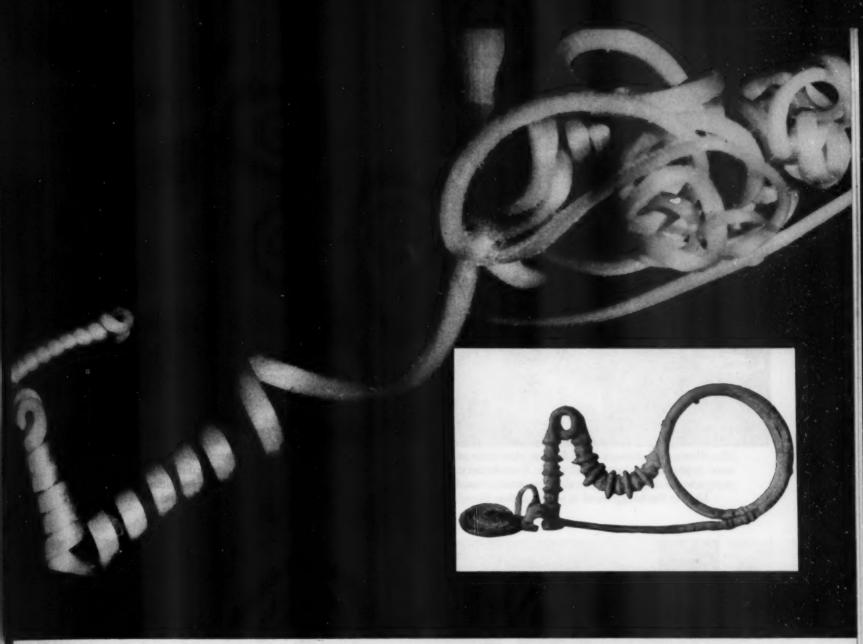
That is why, in the manufacture of goods and merchandise for today's living, art forms are a vital sales ingredient and as necessary to the manufacturer as a good merchandising program.

The studies on these pages show how close to nature the great designers worked in the classic periods of art. They realized that art forms, although in essence functional, cannot be conceived in terms of T-square and drawing board; and they were not afraid to hunt in the great museums and archives of nature for sources of inspiration.

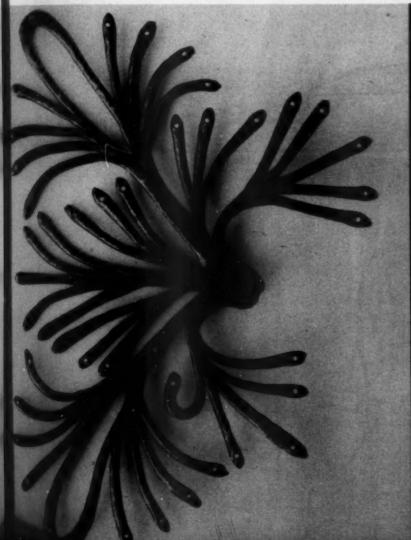
These pictures reveal a secret often forgotten today, that it is a part... and an important part... of the function of everyday things, when rightly designed, to refresh and recreate our spirits with their beauty.

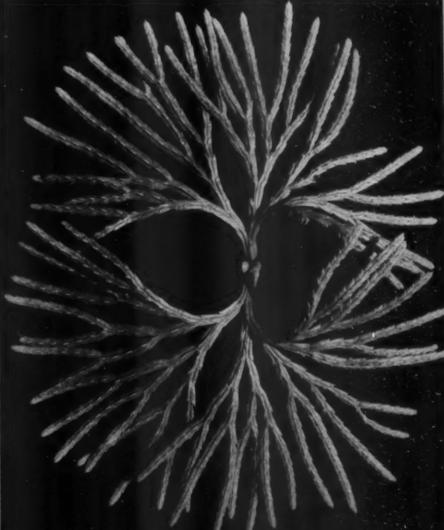
This is true of a bowl or a plate, a brooch or a door-hinge, such as the examples illustrated here, and it is no less true of textiles of every kind that form so great a part of today's design for living. The manufacturer and merchant who remember this secret will indeed be richly rewarded.

NATURE PHOTOGRAPHS, TET BORSIG. ART OBJECTS, METROPOLITAN MUSEUM.



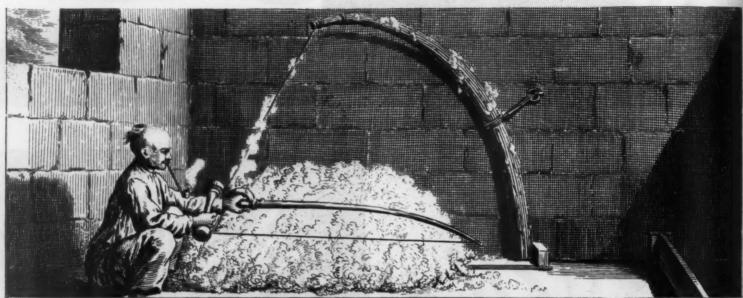
Above: TENDRILS OF A GOURD AND, IN INSET, BRONZE BROOCH OF THE MEROVINGIAN PERIOD, 4TH-7TH CENTURY A.D. Below left: Door-mounting of wrought-iron, catalan 13th century. Right: spring of the prince's pine (Lycopodium).



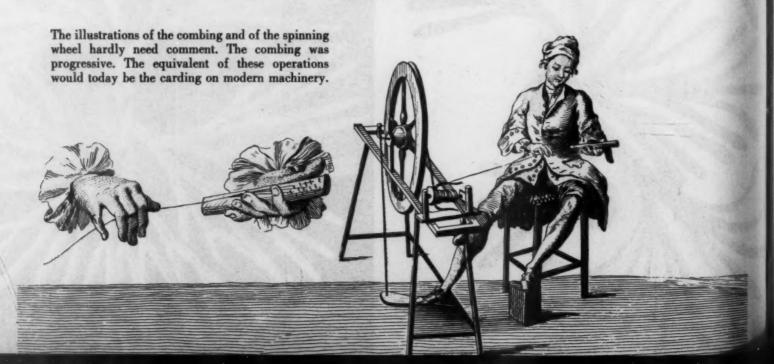


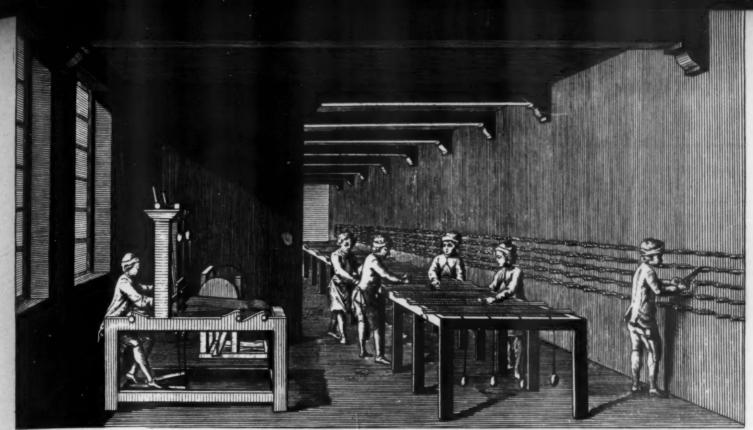


The illustration shows a West Indian plantation of the middle Eighteenth Century where cotton was grown on trees which were kept growing for several years. A workman stands inside a hanging bag, stamping or pressing the cotton. Another man sprays water on the bag to make it contract around the cotton and prevent the fiber by moisture from fluffing up within the bag. In the background is seen a cotton gin of roller type, quite different from the gin later invented by Whitney.



A Chinese worker is seen fluffing up the cotton by means of a bow (archet) and string. This was the operation which today the picking machinery performs in our modern mills.



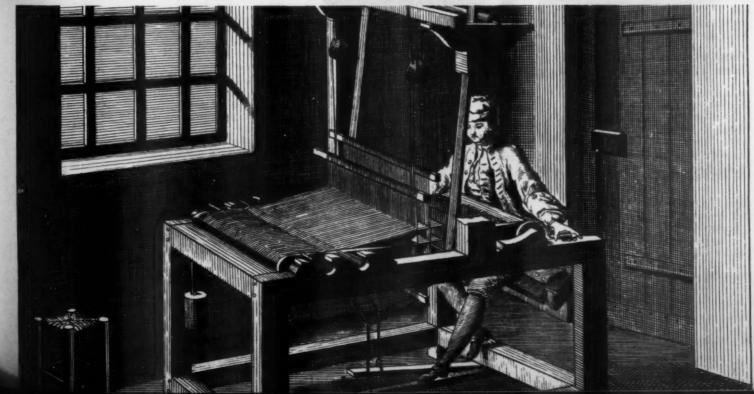


Above are seen the operations of warping, sizing, slashing and weaving, as they were performed in the 18th Century. An old system of warping on pegs driven in the wall consisted of laying parallel strands of yarn. The warp produced in such manner was then laid on the table and a layer of sizing was applied in order to impart to the yarn the necessary strength to counteract the chafing action of the weaving. An early type of weaving loom is shown at left.

18th Century engravings depict cultivation and production of cotton

Right: Cotton plant and seed-pod from which the cotton is obtained. Below: A close-up view of an early type of weaving loom.







The Hand-Carding of Cotton Fibers

In order to render the fibers of the cotton parallel a section of the fiber is unrolled.



First the outside is combed, by means of a wood block carrying metal teeth, to make the fibers lie parallel.

Next, reversing the comb, the inner layer of fibers is treated in the same fashion as above.

At right is shown the finished sliver re-rolled through the comb upon the original staff.



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letters to the editor

NOTES ON DESIGNER'S NOTEBOOK

To THE EDITORS:

Can you tell me the history of the Sun, Moon and Stars design that is on the cover of your small publication called *Designer's Notebook*.

We have a piece of fabric with sun, moon and stars which is similar although a slightly different design. We have no history whatever with it. Our fabric, which is a loan for the season from the Albany Institute of History and Art, is a tabby weave cotton printed in red and black which has faded to a brown. We would like to know the significance and the age of this design if you can give us that information. We will appreciate having whatever you can tell us.

Janet R. MacFarlane, Curator The Farmer's Museum, Inc. Cooperstown, New York

Editor's Note: The reproduction of the Sun, Moon and Stars design from our Designer's Notebook was made from a most interesting portfolio collection that was published some years ago in France. This collection is called "80 Toiles Imprimées."

The portfolio includes certain general information about the origin of the designs. It would appear that this design was part of a group originated for the purpose of trade with Africa in the slave traffic; in other words, these designs were made for trade with African tribes who in turn delivered slaves to the French traders to provide the American colonies and the West Indies. Although the portfolio does not give any definite information regarding the origin of the designs themselves, we may surmise that this is an interesting case of Europe creating or adapting native styles in design for the export trade.

YARNS FOR RUG WEAVERS

To THE EDITORS:

There is no source from which I gather so much excellent information as AMERICAN FABRICS.

The articles on man-made fibers and Ramie in the Spring Issue were of special interest as I have been doing considerable experimenting with these yarns, in rug and handweaving this past year. I am a student at the Cranbrook Academy of Art, Bloomfield Hills, Michigan.

In the Ramie experiment, domestic and imported fibers were used in the warp. The weft yarns varied ... Ramie, wool, synthetic, novelty. Warp was dressed with flaxseed.

Vicara, viscose-jute, viscose, viscose acetate were used in drapery and upholstery samples. Viscose-jute, viscose, viscose acetate yarns were

used in rug samples and for a large rug six by nine feet. I am most fortunate in having all your issues to date

> Dorothy O. Gaymer Lansing, Michigan

FASHION ILLUSTRATIONS WANTED

TO THE EDITORS:

Without any intention of minimizing the value of your excellent informative and illustrative content in AMERICAN FABRICS, I have frequently felt that some of the articles featuring both historical and current fabrics would be much more pointed up if you showed fashion illustrations with them or, as you frequently call them, the end-use products. It would be a splendid help to see how the manufacturers are really using the new fabrics, or how the stores are displaying and promoting them.

Maybe this means added research and staff work, but it should be well worth it. On the occasions when you have shown fashions-in-fabrics, such as in the Carolyn Schnurer feature, it seemed to me a decided enhancement of the story. I am sure that many readers, in all categories of the textile fields, would be grateful for more of this.

Winifred Laughlin Detroit, Michigan

WHAT THE CONSUMER LOOKS FOR

To the Editors:

I am setting up a radio program which will include in it five minutes on fabrics (it will also be devoted to news, fashion and gossip on well-known personalities) and would like to formulate for you what I think will be a listener's chief interest in fabrics.

I am writing to you because I follow AMERICAN FABRICS in order to keep up on what is taking place in the fabrics field. I read with enormous interest how you gave the keys to nylon, Orlon and Dacron and while I wouldn't say I am 100% clear on it all, nevertheless I do have a reference by which I can help clear up my own confusion on the performance of these new fibers.

I have talked to many store people and consumers and have come to the following conclusion: that no one cares about the construction of a fabric; that all one wants to know about concerns itself with two factors, the care of a fabric and the performance of a fabric. By performance I mean: is it crease-resistant? is it durable? is the finish for the life of a garment?

I am so convinced of this that no matter what your answer is, I will go ahead with my convictions (the sponsor being willing!). You may well ask why I am typing what now amounts to an epistle . . . Despite my assured air, I would like the confirmation of my thoughts from such an authority as the editors of AMERICAN FABRICS.

Thank you for an answer and I need not say that your magazine is invaluable for those groping souls who long for clarity with the on-slaught of all these new fibers.

N. Niss Westport, Conn.

ON NEW FIBERS AND FABRICS

TO THE EDITORS:

For sheer information of everyday use and value, I want to applaud your presentation in the Spring 1952 issue on The Key to Today's New Combinations of Three Great Fibers. It is one of the best in your impressive list of textile features in AMERICAN FABRICS.

The names Orlon, Dacron, Nylon may be household terms throughout the land, but it is fairly certain that not many people outside of textile circles have clearly understood the differences among these Du Pont fibers nor have known how to choose from among them for different purposes and what to expect of them in use for wearing apparel and household furnishings. Too often treatises on textile subjects are formidable in their technicalities. Your article is readily comprehensible and yet gives all the vital points about these new fibers. Of course the swatches are a wonderful help in illustrating their features and points of difference.

One of your correspondents made the suggestion in a recent issue that the series of articles AMERICAN FABRICS has been running on the new fibers and fabrics might make an excellent collection for a single handy volume. I should think that the textile industry might be very eager to underwrite such a publication as it would be educational for the consumer to a degree that would make for a more intelligent buying public . . . something that industry is always striving toward.

William H. Henry St. Louis, Missouri

LIBRARY OF PAST ISSUES

TO THE EDITORS:

We have a subscription to your magazine which we enjoy a great deal and which our department uses extensively. We have bound the yearly copies for the last several years so that we now have a quite impressive library of these books.

Norman A. Urquhart Fabric Center Robert Simpson Company Ltd. Toronto

OLD AND NEW WORLD DESIGN

TO THE EDITORS:

What a beguiling wealth of creative material. But why is so much of it from the Old World? Clan Tartans, Lovats and Gun-club checks from Scotland, Paisleys from Persia, India and Kashmir, fashions in cotton fabrics from Japan. But is there not enough material in America to satisfy the creative urge in the American textile industry for centuries? You have told us how cotton growing of domestic varieties has been established in America for at least 4500 years; and there are the native traditions from Peru to Alaska . the Mayan, Aztec and Indian cultures. There are the Spanish, French and English colonial cultures and there is our own industrial revolution.

It is true that in some of these phases the source of design material was the Old World, but it was quickly assimilated and adapted according to climate and local complex of needs. At that time of necessity everything, almost, was imported. But today we don't build Buicks after English designs.

Alan Friedman Morristown, N. J.

NEW DICTIONARY SUGGESTION

TO THE EDITORS:

The dictionaries you have run from time to time in AMERICAN FABRICS have been very helpful. We have used them over and over again . . . all the ones ranging from textile terms to dyeing and finishing.

Here's a suggestion for a possible additional Condensed Dictionary. We would like some time to have a list of all the major fabric weaves, the place of their origin and a history of their development. This would be a sort of geographical dictionary of textile terms and could be very informative, I am sure, esespecially for fashion writers and students of the textile arts.

Elizabeth Stanley Sacramento, Calif.

A HELP TO HAND WEAVERS

TO THE EDITORS:

I do want to let you know just the way I feel about AMERICAN FABRICS. It actually is the best source on the market for me as a designer-weaver for reference on all yarns, be they natural or man-made . . . and as groundwork in preparing informative, instructive, and interesting student programs.

Be assured, if it's of any significance, that hand weavers are behind your efforts wholeheartedly.

Hal Painter, President Professional Weavers Assn. San Francisco



THE CONSUMER

The millman, the converter, the apparel manufacturer, the retailer, the retail clerk... all constantly use textile words and phrases as selling blandishment... all assuming that Mrs. Consumer knows what they're talking about. Sadly enough, a good deal of it is incomprehensible to her. And so writer Cora Carlyle gathers a

- Q. I have noted zibelline advertised in the description of coats and suits. What is zibelline?
- A. Originally it was a heavy woolen goods identified by a long, shaggy nap which was uneven in surface texture. The nap is pressed down so that it lies fairly flat. The fabric is now back in popularity once more and is being made with mixtures or combinations of wool, alpaca, mohair and some of the new man-made staple stocks. Some of the fabric is made with varying amounts of rayon and cotton. Be sure, when buying a zibelline, to look at the label for the fiber content. The cloth may be identified by its polished, sheen-effect surface.
- Q. Now that petticoats are here to stay, it seems, some of my dresses need the bouffant petticoat. How can I judge, when purchasing these garments, if they will stay stiff?
- A. There are many types of popular petticoats on the market—
 nylon net, nylon tulle, plastic such as Saran, nylon or acetate
 taffeta, rayon net, cotton net. Any or all may have durable
 finishes applied which will last through dry cleaning; any or
 all may have some simple non-durable finishes which begin to
 leave the fabric at the first wearing.

General advice in buying a bouffant petticoat which may be attached to a skirt (and, therefore, is important to know about) is to ask the salesperson or the buyer for the department to inform you with regard to its lasting effect of stiffness. There is at present no labeling regulation in force regarding these garments and for the time being you must rely on the store where you make your purchase.

Your dry cleaner can restore stiffness in some fabrics, depending on whether the finish is built into the garment or not. He must also know the fiber content so that he can act accordingly in his treatment of the goods.

- Q. I am writing a paper on the properties and characteristics of cotton and am not satisfied with my findings on fiber strength in yarns, fineness of fiber and its correlation with yarn strength; also just what the term grade indicates or means. I shall be grateful to receive book references or your own answers on these points.
- A. We receive many requests from textile students and usually refer these back to the student to take up in detail with the classroom instructor. However, here are some basic points which may clarify your present findings.

Fiber strength contributes about 37% to the strength of yarns in the coarse and average types. Fiber fineness is very important to yarn manufacturing because it contributes about 16% of the yarn strength in the average counts and becomes increasingly more important as finer counts are spun. When yarn sizes pass 50s in count, the order is reversed and the fineness becomes more important than fiber strength. Maturity of cotton is very important to fabric dyers and finishers. The

nature of immature fibers can change the strength and the fineness readings.

Grade indicates waste, staple limits and yarn sizes. The upper half mean-average-length of a fiber means that this length is found in the upper half of the fiber sample being tested. The mean-average is the length of all the fibers involved. Uniformity ratio of the mean implies correlation with the upperhalf mean. Length and uniformity coincide with about 47% to yarn strength. Fiber uniformity is most important in manipulating cotton fibers because it does have an effect on yarn appearance and ease of handling.

- Q. Recently I bought a Wilton rug, all wool, and was assured that it was one of the best obtainable. To my dismay, little balls, rolls or nubs of loose fiber began to appear on the surface, even after several vacuum cleanings. Would you say that I have bought an inferior rug?
- A. Because these loose fibers appear does not mean that you have an inferior carpet; this is no cause for worry. During the manufacture of the rug, there are finishing steps in which the surface must be cut or sheared. Also, loose fibers from the weaving of the goods are still embedded in the fabric. These, along with other fly, flocks and chaff, will work in during the time the carpet is in the mill and they will work out after the rug is in use on the floor. It may take some little time for these loose fibrous stocks to work their way out of the rug. This condition occurs in the best of rugs.
- Q. What is the best way for me to wash and iron garments which have elastic yarns in them? Or is it necessary to have them dry cleaned?
- A. Elasticized garments can be washed and need not be dry cleaned. Mild soap flakes should be used in cool to lukewarm water. Squeeze the suds well through the article and use a soft wash cloth to work the dry soap flakes into the soiled areas. Make sure that you dry the garments in the shade, away from heat. Do not attempt to iron them.
- Q. I have a carpet whose surface seems to have darkened in the areas that come in contact with foot traffic. Is there any way in which I might try to bring back the lost luster, or is it necessary for me to send the rug to a carpet cleaning firm?
- A. The use of a carpet sweeper or vacuum cleaner daily might have arrested the darkening process; this treatment keeps dirt from becoming imbedded in the pile. You may be able to bring back the luster by sponging the surface with some established liquid cleaner or by the use of absorbent powder cleaners which are often very effective. It does pay, however, to have carpets cleaned occasionally by professionals since results show that they can do a truly amazing job in restoring an even luster and pile effect.

WANTS TO KNOW...

group of typical Mrs. Consumers before each issue goes to press... asks them what they'd like clarified in textile terms... and puts the questions to Dr. George Linton, Textile Editor. Here is the latest group, and the answers may provide illuminating information for the benefit of many readers.



- Q. My husband has a couple of Dacron shirts which I wash by hand with a detergent. The marks at the collars and cuffs, however, I find most difficult to remove. Is there some method that could be used to clean the shirts effectively without so much effort?
- A. Try rubbing the fabric on itself, or use a soft brush or cellulose sponge with soap. You might resort to machine washing since it seems to be more effective on dirt and grime than hand methods of washing. Use medium-hot water. Or, you might use a liquid or powder bleach. If there are no directions in the bottle or package for bleaching Dacron, use the same instructions as are given for bleaching cotton or nylon.
- Q. I have several rather expensive nylon slips of both tricot and satin and have had trouble with the shoulder straps giving out long before the slips show any signs of wear. What is the reason for this?
- A. When nylon slips were first brought out nylon ribbon for straps was not being made. Consequently, manufacturers of slips used straps made of materials which did not have the ability that nylon has to resist wear or abrasion. Recently, however, slip makers have begun to use nylon ribbon. We suggest that the next time you buy slips, you specifically ask the salesperson or buyer for styles made with nylon straps. As for the slips you now have, why not replace the straps with nylon ribbon?
- Q. In a recent advertisement of suits made of mixed fibers, the phrase no pilling appeared. What does this mean?
- A. If the yarns in a fabric have been loosely twisted together to give a soft result, it often happens that some of the fiber stock pulls out from the body of the yarn in the material. These straggly ends may then tangle or gnarl together into little balls, commonly referred to as pills. The effect is often seen under the arms or where creases appear from wearing or chafing. This matter has been of concern for some time to manufacturers of fabrics. There has, however, been much progress made within the last year in combatting pilling, and newer techniques in fiber mixing will probably remedy the situation altogether in the course of time.
- Q. I wear a veil on every hat that I own since I think it a smart way to set off headgear. I am troubled by the fact that the veilings become limp and bedraggled after a few wearings, even when they have not been caught in the rain. Is there any practical method to bring a veil back to its original crispness?
- A. There is a simple way of restoring veiling. On a padded, flat surface lay a piece of brown paper, then a good grade of waxed paper, then the veil, and finally another layer of brown paper. Press with a warm iron, slowly passing the iron over the paper in a back-and-forth action. The wax will be absorbed by the veiling (wax is often used by the manufacturer for this

- very purpose). The brown paper is to prevent the wax from adhering to the iron and on the surface underneath. Make sure that the iron is not too hot, as this may cause the wax to seep through the brown paper.
- Q. My teen-age daughters are very fond of quilted fabrics for their dresses and skirts, and even for evening wear. The only fault I have to find with these garments is that I cannot wash and iron them at home without flattening the puffed surfaces, which completely spoils the original appearance. Is there anything I can do to restore the looks of the garments I have already laundered? Is there any correct method to follow in laundering to do away with the poor results?
- A. In the making of quilted fabric for dress use, cotton is placed between an upper and an underneath fabric, and then all are stitched in a quilting design. The upper and the under fabrics may be cotton, rayon, acetate, silk and so on, and any of these would be washable if used alone. However, the thread which holds the fabrics in place and provides for the quilted effect may cause the trouble because it is often not the type that should be used, and often much of the stitching is not what it should be. If you launder the garments at home, use a hand iron or an ironing machine. Either method, however, may flatten the puffs and cause the fabric to look stiff and out of line.

In order to maintain the resilience of the batting used between the fabrics, you should have garments of this type cleaned and finished off by a professional cleaner. Modern steam-air finishing equipment is now designed to steam and finish the fabrics so that no pressure rests on the fabric. It would be most difficult to do this at home by hand laundering.

- Q. I get great pleasure from wearing blouses and dresses made of the new nylon and Orlon fabrics, but I find that the seams come apart quite easily, often after a couple of wearings. Even in parts of garments where there is little or no tension, the same thing occurs. Is there anything you can suggest to counteract this seamsplitting?
- A. There are, of course, many problems to be encountered with the tailoring of fabrics made from the new fibers, among them the stability of seams. The International Association of Clothing Designers is working diligently on these problems and gradual progress is being made. The ideal and most plausible solution which they are likely to come up with will be to sew the seams with threads of the same fiber as the fabrics themselves. There is, however, further research necessary in some cases because of the heat generated during sewing, needle breakage because of heat, and so on. Some manufacturers have therefore been using thread for seams that is not really adapted to the new fabrics. Undoubtedly, all of the problems will be solved satisfactorily and announcements on seam stability will probably be made shortly.



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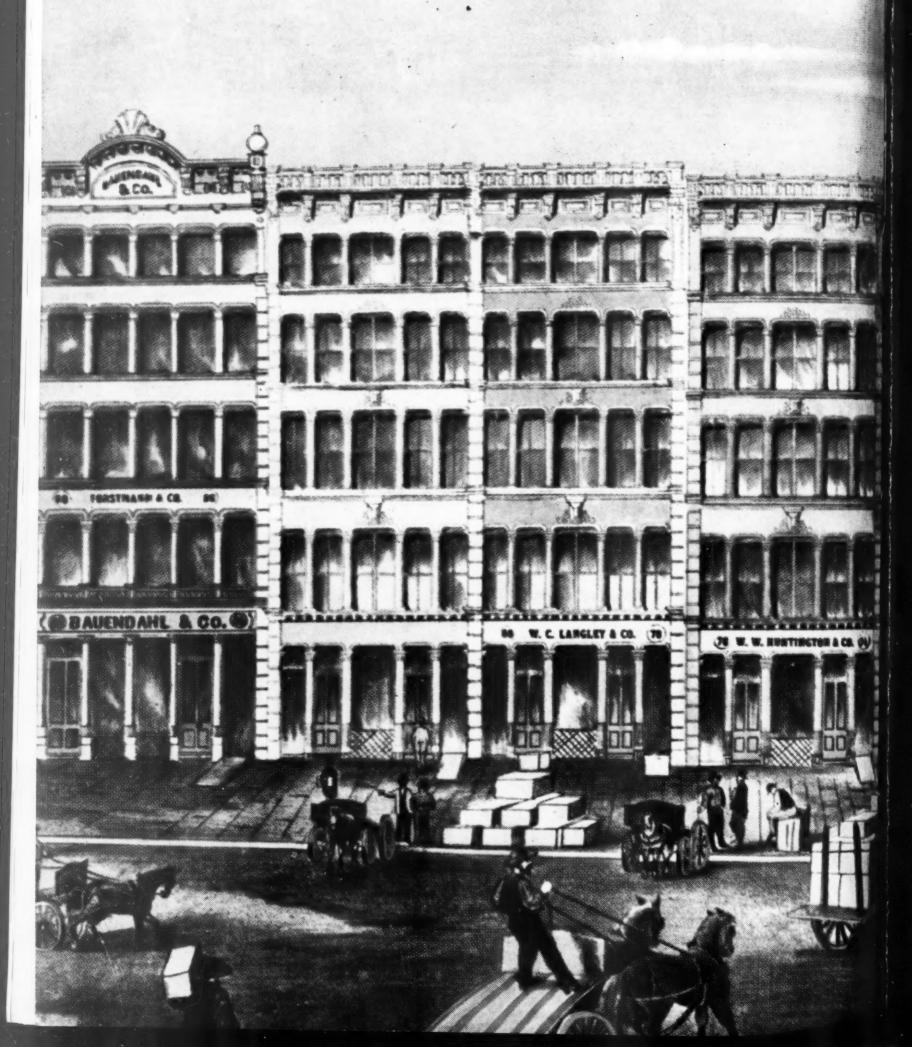
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